

English



Drakensberger Cattle Breeders Society
HANDBOOK 2011 • FIRST EDITION

The Profit Breed

Drakensberger Handbook

The Drakensberger is a medium-framed 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 born, 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, robustness and natural resistance against diseases, especially tick-borne diseases.

Information from the Agricultural Research Council's Institute for Animal Production, shows that Drakensberger cows, compared to other cattle breeds in South Africa, show the lowest incidence of diseases 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 as well as the ARC National Beef Recording and Improvement Scheme are provided, while breeders can also learn more about SA Studbook and the use of software applications such as INTERGIS, LOGIX, BeefPro and StudMaster.

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Abbreviations

ABBREVIATION	DESCRIPTION
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
INTERGIS	Integrated Registration and Information System
LOGIX	Livestock Operational and Genetic Information Exchange
RTU	Real Time Ultrasound
SC	Scrotum Circumference
SP	Studbook 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.
- ARC Annual Reports and Newsletters.
- ARC Rules and Regulations - National Beef Recording and Improvement Scheme (Oct 2009).
- Supplements.
- Drakensberger Newsletters.
- President's Report 2010.
- BLUP reports.
- The Manual for Stud Breeders (SA Studbook).
- Drakensberger Cattle Breeders Society's web page (www.drakensbergers.co.za).

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An exceptional word of gratitude to Mr. Dave Eden, who served the breeding 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

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1. Introduction

The Drakensberger is a medium-framed 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 Breeding Society

The role of the Drakensberger Cattle Breeding Society is mainly administrative of nature. The office is based in Volksrust 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, SA Studbook and the Agricultural Research Council (ARC).
- 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.
- Judging at shows.
- Patrons at sales/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 Swartdirk, who left Grahamstown in 1838 for Natal, would later play a significant role in the development of the Drakensbergers. With methodical inbreeding and strong selection within a closed herd, Swartdirk Uys (1814 - 1910) bred exceptional animals in the district of Wakkerstroom and Utrecht, where he chose to settle. Swartdirk'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 Breytenbachs, Du Pisanies, Du Plessis's, Maritz's, Smuts, Potgieters, Spies, Van Rooyens, Engelbrechts, Jordans, Kemps, Kloppers, Kochs and Prinsloo's.

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 cattle.
- The Anglo-Boer War (1899-1902), where roughly 600,000 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 Uysbeeste be acknowledged as a breed in terms of the Stock Improvement Act of 1934. Because the development of the Uysbeeste 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 was 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 Studbook 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 Swaziland, 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.

Table 1: Area distribution of Drakensberger herds.

AREA	2009	%	2010	%
Mpumalanga	4,115	32.5	3,883	29.8
Free State	3,928	31.0	4,140	31.8
KwaZulu/Natal	1,703	13.4	1,650	12.7
North-West/Northern Cape	1,236	9.8	1,311	10.1
Karoo/Eastern Cape	925	7.3	911	7.0
Gauteng	769	6.0	925	7.1
Namibia			79	0.6
Australia			118	0.9
Total	12,676	100%	13,017	100%

SOURCE: Blom, 2010: Annual report - Distribution of cattle.

Looking at the distribution of commercial herds, Drakensbergers are found even more common in South Africa. Statistics from veterinary inspectors show that around 8% (640,000) of all cattle in South Africa, are Drakensbergers (or of the Drakensberger type). This figure was confirmed by beef cattle consultant Danie Bosman (previously of the Agricultural Research Council).

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 2: 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



According to the ARC's 2009-10 Annual Report of the National Beef Recording and Improvement Scheme, the Drakensberger's age at first calving (AFC) is 33.8 months, while the South African national average is 31.4 months.

A long and productive life of 15 years and even longer is common for the breed.

Table 3: Productive life expectancy of Drakensbergers.

Age	Female	%	Male	%
0-2 years	4,833	42.9	2,001	78.4
2-4 years	2,630	23.3	383	15.0
4-8 years	2,567	22.8	142	5.6
8-10 years	740	6.6	21	0.8
10-15 years	466	4.1	5	0.2
15+ years	30	0.3	5	0.2
Total	11,266	100%	2,557	100%

Reference: Hunlun 2010 as summarised - Date 1 July 2010.

Some statistics regarding cow performance:

Table 4: Statistics regarding Drakensberger cow performance.

Attribute	2007	2008	2009	2010
Birth weight (Kg)	35.7	34.6	34.9	34.4
205 day weight (Kg)	207	204	208	211
Yearling weight (Kg)	229	231	229	237
18 month weight (Kg)	317	310	309	329
Cow weight at calving (Kg)	477	462	457	465
Birth weight ratio (%)	7.6	7.6	7.7	7.2
Cow weight at weaning (Kg)	513	499	498	491
Weaning weight ratio (%)	41.3	43.3	43.8	45.2
Age at first calving (months)	34.6	33.8	33.8	34.6
Average ICP (days)	429**	429**	430**	
ICP last 2 calvings (days)	422	436	432	432

Source: ARC Annual Report of the National Beef Recording and Improvement Scheme

** - Blom Annual Report 2010.

From this report the following: The average weight of the Drakensberger cow at giving birth (1,199 cows) is 457 kg (South African national average 492 kg), and the birth weight ratio is 7.7% (SA national average is 7.3%). At weaning, Drakensberger cows weigh on average 498 kg (1,492 cows) and the weaning weight ratio is 43.8% vs. 500 kg (29,707 cows) and 43.9% of the SA national average. It is insightful that the Drakensberger cow's weight increased by 41 kg while nursing a calf, measured against the SA national average of only 8 kg.

This says a lot about the Drakensberger!!!

Information from the Agricultural Research Council's Institute for Animal Production, shows 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.

Table 5: Percentage mortalities to weaning age.

	Abortion	Stillborn	Natural causes	Tick-related diseases	Other	Total
Drakensberger	0.29	1.3	0.44	0.51	0.68	3.22
Ave. 9 breeds	0.49	2.24	1.22	1	1.21	6.16

Source: DJ Bosman ARC Irene.

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.

Table 6: Growth after weaning, ADG and FCR.

	Number	Final weight	ADG	FCR
Drakensberger	65	453	1,735	5.66
SA National Average	1,444	463	1,726	5.90

Source: ARC Annual Report of the National Beef Recording and Improvement Scheme.

The best feed conversion ratio for a bull in the 2009 test year is the bull GR080146 [FCR 4.24 (127); ADG 1,825 g (127)] of Gawie Roux (Rouvus Stud) of Ventersburg. Source: Blom Annual Report 2010.

10. Drakensberger in the feedlot

A Masters' degree student, Ms. Mia Niemand's dissertation on "Drakensberger in the Feedlot" shows that the Drakensberger is in demand at various feedlots. Examples of performance in the feedlot are evident.

Table 7: Drakensberger in the feedlot.

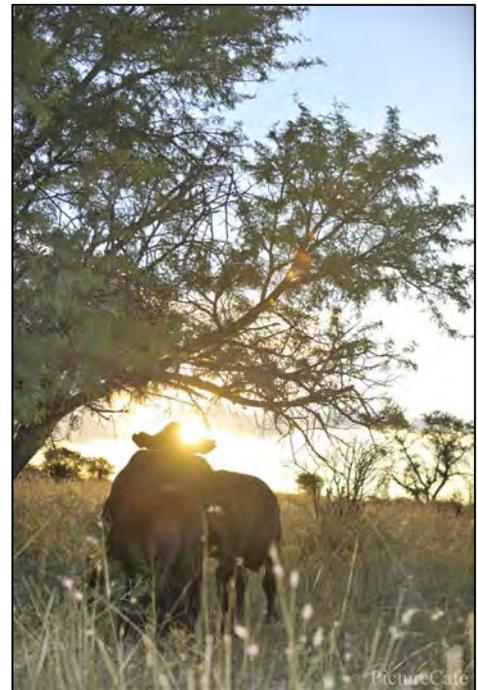
	Kanhym (1,015 Drakensbergers)	Feedlot near Vrede
Days in feedlot:	109	93
Starting weight:	199 kg	240 kg
Final weight:	357 kg	369 kg
ADG:	1,446 g	1,387 g
FCR:	4.72:1	
Morbidities:	7.5%	0%
Mortalities:	0.89	0

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 Nesor (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 might be of assistance in future.

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 8: 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.
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.

STANDARD OF EXCELLENCE		
	BULL	COW
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. Dehorning is allowed. Naturally hornless animals are allowed, if SP.	Strong and moderately long, with black tip in mature animal. Round or very slightly oval-shaped, growing sideways, then forward and upward. Dehorning is allowed. Naturally hornless animals are allowed, if SP.
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.

STANDARD OF EXCELLENCE		
	BULL	COW
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.
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)		
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.
Hooves	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)		
	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.

14. System of selection

All animals are selected according to 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. Two inspectors will at all times be present at an inspection, with at least one being a senior inspector.

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. The board can then promote the learner-inspector to junior inspector, after which another 3 (three) inspection tours must be completed in the company of two other inspectors. After each inspection tour, a positive report by the senior inspector must be submitted, after which the board may promote the junior inspector to senior inspector.

A refresher training 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, divided by the number of animals



assessed, plus VAT. Invoicing is done after completion of the inspection tours. The deposit will be subtracted from the amount due. An administrative fee is charged.

Special inspections are also done throughout the year for members concluding phase C and D 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 are applicable. 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.

Performance figures are applied as follows during inspection: For phase A and B, 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 phase C and D, the weaning index, ADG and FCR or Kleiber are used. The average of these indices must be above 90.

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 9: Minimum scrotum circumference.

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

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

14.1. Disqualification codes

Table 10: Disqualification codes.

CODE	DISQUALIFICATION
A GENERAL APPEARANCE	A1 Off type. A2 Poor muscling. A3 Too flat. A4 Pony-type (dwarfism). A5 Too big. A6 Bone structure too coarse. A7 Bone structure too fine. A8 Lack of body depth. A9 Lack of body length. A10 Poor weight for age. A11 Poor balance (H : L). A12 Poor balance (fore - : hindquarter). A13 Poor constitution or poorly adapted. A14 Abnormal gait. A15 Defective skin.
B PERFORMANCE	B1 Slaughter clause B2 Average of indices below 90. B3 Has not calved at 39 months. B4 If not re-calved within 730 days.
C COLOUR	C1 White above belly line. C2 Whole white switch. C3 Red (red hair or reddish shine).
D HAIR	D1 Woolly coat. D2 Long, curly hair.
E MASCULINITY/FEMININITY	E1 Ox-like. E2 Lack of femininity (female animals). E3 Lack of masculinity (male animals).
F TEMPERAMENT	F1 Wild.
G HEAD	G1 Not typical (off type). 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.

CODE	DISQUALIFICATION
	G9 Head too small and/or too long. G10 Hollow head. G11 Flat horns. G12 Loose horns.
H FORE-QUARTER	H1 Loose shoulders. H2 Over-developed breastbone (heifers). H3 Falls away behind crops (pinched). H4 Roofy shoulders.
I CENTRE	I1 Weak or hollow back. I2 Curved back. I3 Hunched back. I4 Devil's grip.
J HINDQUARTER	J1 Hanging rump. J2 Roofy rump. J3 Flat rump. J4 Poor loin muscling. J5 Narrow pin bones. J6 Excessively rounded buttocks (horse's buttocks). J7 Flat thighs. J8 Cut up high between hind legs. J9 Prominent hip bones.
K LEGS AND HOOVES: FRONT LEGS	K1 X-legged. K2 Pigeon-toed. K3 Bandy legs. K4 Stag knees. K5 Duck feet. K6 Knees bent backward.
K LEGS AND HOOVES: HIND LEGS	L1 Too sickle-hocked. L2 Too upright-hocked. L3 Too cow-hocked. L4 Bandy legs.
M LEGS AND HOOVES: PASTERNS JOINTS	M1 Pasterns step through. M2 Sagging pasterns. M3 Pasterns too upright. M4 Bent/twisted pasterns.
N LEGS AND HOOVES: CLAWS	N1 Outgrowing claws. N2 Claws curling inwards. N3 Lack of depth in heel. N4 Claws differ in size. N5 Claws too cloven (cleft too wide).
O TAIL	O1 Prominent tail setting (baboon tail). O2 Skew tail. O3 Congenital kink in upper third of tail.
P REPRODUCTIVE ORGANS: SCROTUM AND TESTES	P1 Testicles too small. P2 Testicles too big. P3 Testicles twisted excessively. P4 Absence of epididymus. P5 Hypoplastic. P6 Cryptorchidism (undescended testicles). P7 Deformed testicles.
Q REPRODUCTIVE ORGANS: SHEATH	Q1 Perpetual prolapse. Q2 Sheath too long.

CODE	DISQUALIFICATION
	Q3 Fleshy sheath. Q4 Sheath opening too big. Q5 Navel flap too big.
R FEMALE REPRODUCTIVE ORGANS	R1 Underdeveloped. R2 Horizontal inclination.
S REPRODUCTIVE ORGANS: UDDER AND TEATS	S1 Poorly developed. S2 Bottle teats. S3 Absence of teats (one or more).
T OTHER REASONS	T1 Please specify. T2 Rejected by owner.

Points scored are as follows:

Table 11: Grading points explained.

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

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

14.2. Functional and visual evaluation

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 12: Functional and visual evaluation for inspection.

DISQUALIFICATION (animal is rejected)	DISCRIMINATION (which can lead to disqualification)
(a) HEAD	
Undershot jaw. Overshot jaw. Skew muzzle. Skew face. Light lower jaw.	Compact or excessively long head. Fine or pointed muzzle. Lion chin.
(b) FORE- AND HIND LEGS	
Outward-growing claws. Sagging pasterns. Absence of by-claws. Goat's knees or knees bent backwards. Laminitis.	Widely cleft claws. Claws turned inwards. Claws not equally long or long claws. Upright pasterns. X-legged / Bandy-legged. Pigeon toed. Arched/sickled hocks or upright hocks.

DISQUALIFICATION (animal is rejected)	DISCRIMINATION (which can lead to disqualification)
(c) SHOULDERS	
Too loose. Chine extending far above shoulders.	
(d) BRISKET, BACK AND CENTRE	
Devil's grip (pinched behind crops). Curved back (as seen from behind) (scoliosis). Hunched back.	Hollow back. Flat centre (as seen from behind). Lack of depth.
(e) PELVIS, RUMP AND TAIL	
Skew tail setting. Hereditary twist in tail (top third).	Narrow pelvis. Flat, roofof or drooping rump. Prominent tail setting.
(f) REPRODUCTION	
Prolapse of foreskin. Testicles hypoplastic (single or bilateral). Absent epididymus. Cryptorchidism (one or both testes not descended into scrotum). Horizontally inclined vulva. Teats absent.	Fleshy sheath. Long sheath above sheath opening. Twisted testicles. Long, pendulous scrotum. Infantile vulva. Poor udder development. Small teats. Hereditary unbalanced udder. Deformed teats.
(g) GENERAL	
Coarse hair or woolly summer coat. Wild temperament. Dwarfism. Double muscling. Double skin. Tawny, white or speckled above belly line. Whole white switch (grey switch allowed) White on legs/white above belly line. Hair completely red on head or body.	Long hair. Bulls with feminine or ox-like appearance. Heifers with masculine appearance. Pony-types or excessively large animals. Poor muscling. Fine or coarse frame.
(h) Other deviations not listed:	
Chronic bloating. Poor constitution. Any other hereditary factors. (Grey patch or birth patch is a black, pigmented hide with black and white hair).	

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. 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.

17.2. INTERGIS

The INTERGIS (Integrated Registration and Information System) is a collection of databases and programs that addresses the animal recording needs of a broad spectrum of role-players within the livestock industry, from breeders and owners of purebred animals to the personnel of registering authorities, performance recording agencies, National and Provincial Government agencies, advisors and consultants and related industry organisations. The INTERGIS is one of a few fully integrated animal- and genetic information systems globally. The Department of Agriculture is the curator of INTERGIS and supports it by significantly contributing to its development funding. The INTERGIS was jointly developed by the SA Studbook and the ARC Animal Production Institute, with the latter currently responsible for the management thereof (being sub-contracted by SA Studbook to perform the daily operational functions as well as take care of further developments on the system).

17.3. LOGIX

LOGIX (Livestock Operational and Genetic Information Exchange) is the internet portal to data on the INTERGIS. The aim of Logix 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. 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 performance data (phase A & B) online as well as downloading animal information. Receipt of any births or performance 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 user can be done by downloading an application form from www.logix.org.za.

17.4. 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 BeefPro and StudMaster (short description of each follows below).

17.4.1. BeefPro

BeefPro 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. BeefPro is endorsed by the Drakensberger- and 18 other breeders societies. With BeefPro, recording all aspects of a herd is easy and all documents (for example, matings, births, weights for performance testing, transfers, cancellations and even phase C and D application forms) can be sent to SA Studbook and the ARC electronically via e-mail from the programme, for inclusion and processing on INTERGIS. This electronic option presents a saving opportunity in terms of annual per capita fees (ref. Annexure C).

For more information, visit www.beefpro.net or contact Mr. Leslie Bergh at 082 801 2026.

17.4.2. 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 Studbook'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 Studbook and the ARC, 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 from the ARC. 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 phase D performance figures are calculated, which at this stage corresponds with the official calculations.

17.5. ARC Animal Production Institute

The Agricultural Research Council (ARC) Animal Production Institute is responsible for the National Beef Recording and Improvement Scheme, or as it is commonly known, the Performance Test Scheme (or even only as the Scheme).

18. The National Beef Recording and Improvement Scheme

The motto of the Scheme is: "To measure is to know". The National Beef Recording and Improvement Scheme consists of various phases, which are shortly summarised below.

18.1. Phases of the Scheme

The Scheme consists of seven phases:

- Reproduction phase (Phase A1)
- Suckling phase (Phase A2)
- Post weaning phases:
 - On-farm recordings (Phase B)
 - Central performance tests (Phase C)
 - On-farm performance tests (Phase D)
 - Feedlot recordings (Phase E1) (*inactive*)
- Slaughter phase (Phase E2) (*inactive*)

It can be represented schematically as follows:

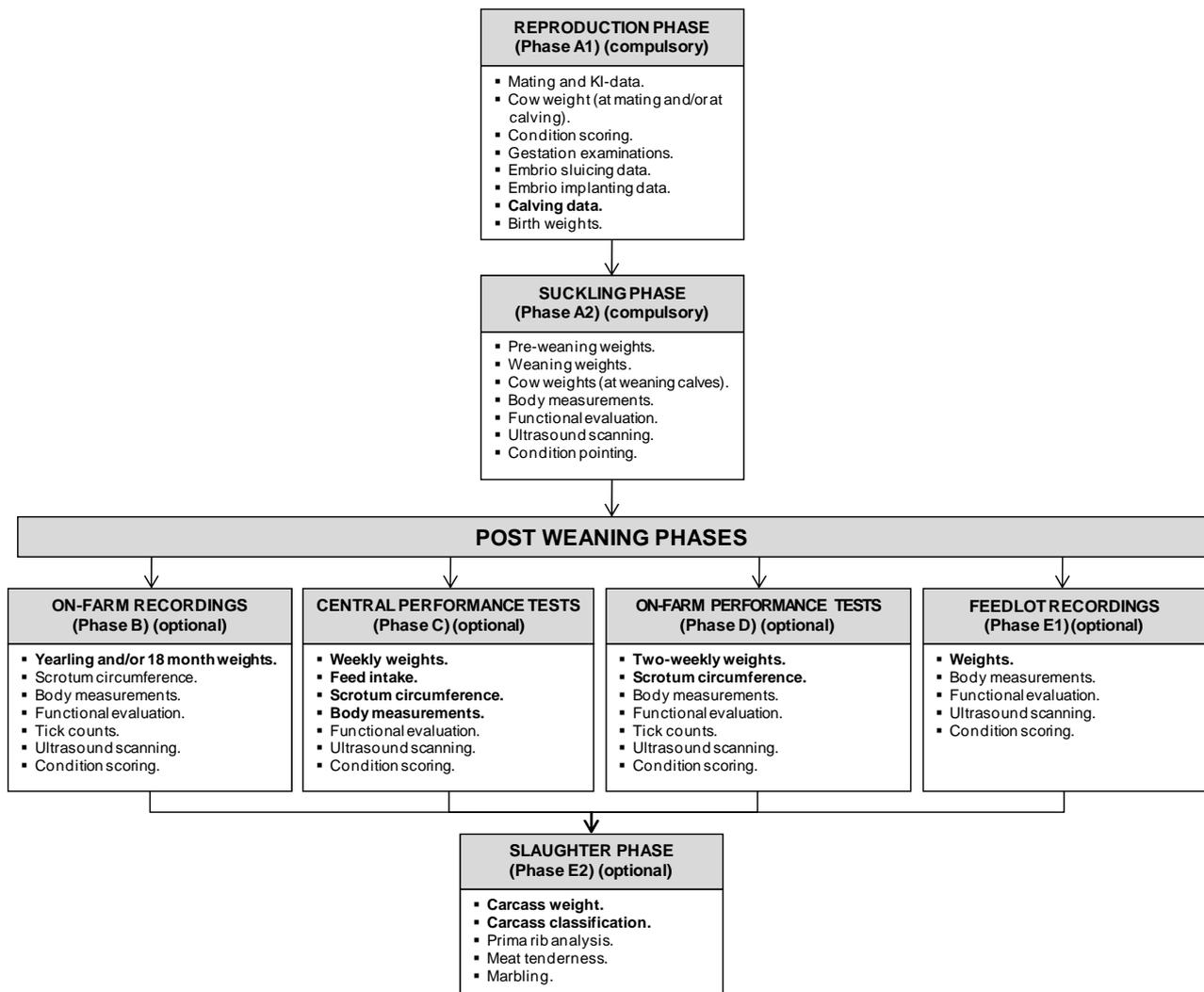


Figure 1: Schematic representation of the National Beef Recording and Improvement Scheme.

Source: ARC Rules and Guidelines - Beef Scheme Oct 2009.

For the purposes of this handbook, only phases A, B, C and D are elaborated on.

18.1.1. Phase A

Phase A involves the evaluation of breeding cows and their calves. It includes mating and AI data, birth notifications, pre-weaning weights (optional) and weaning weights. Birth weight should be taken within three days after birth. It is optional, but highly recommended, and also the mother's weight after calving. 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.



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 phases). Pre-weaning weight (phase A1) (optional) is taken between age 51 to 150 days and the weight is adjusted to 100 days. Weaning weight (phase A2) is taken between age 151 to 270 days and the weight is adjusted to 205 days. Cow weights at weaning is also optional but strongly recommended. From these phases, indices for pre-weaning and weaning, as well as the weaning weight/cow weight and the cow efficiency ratios are 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).

18.1.2. Phase B

Phase B weighing is done at 12 months (B1) and 18 months (B2). These tests are mainly done in the veld and on the heifers. Bulls can also be tested in the same way, but phase C and D is 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, indices for 12 and 18 months are obtained. Note that, like for phase A, 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).

The cost for participation in phases A and B of the Scheme consists of an annual herd fee and fee per animal in the herd - refer to Annexure C.

18.1.3. Phase C

Phase C entails centralised growth tests at central ARC or private testing station. Phase C1 is a test at an ARC testing station, C2 at a private testing station with more than one breeder's bulls and C3 at an ARC or private testing station with only one breeder's bulls. In phase C1 and C2, bulls are evaluated against a rolling 10 year average, while in phase C3 they are evaluated against the specific group's average. For a list of phase C testing stations, see Annexure C.



Tests commence at preset 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. 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 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 phase C bulls which are accepted, must be done by the inspectors in charge of the inspection. The breeder is responsible for the travel cost of the inspectors.

Merit awards are offered by the ARC to approved bulls meeting the following requirements:

Category	Minimum Weaning Index	Minimum ADG Index	Minimum FCR Index
Gold	100	100	107
Silver	95	95	100
Bronze	90	90	90
Sub	Bulls that pass the inspection, but in one or more aspects do not meet the above performance standards for gold, silver or bronze merit awards.		

From the bulls that obtained gold or silver merits in the previous year with weaning-, ADG- and FCR indices of at least 100 and a pointing of 80+, the board nominates one bull to represent the breed at the ARC's Special Performance Test Class at the Spring Show (previously Pretoria Show).

A gold merit bull from an elite mother receives a platinum award. The requirements for a platinum award are as follows:

- The bull must obtain a gold merit award in phase C (phase C1, C2 or C3).
- The mother of the bull must have obtained an elite award before or during the year in which the relevant bull received a gold merit award.
- Bulls that completed a phase C test in the previous calendar year, will qualify for an award in a particular year.
- The mothers of the bulls will be verified for elite status based on the annual Best Producing Cow awards.

Comprehensive information regarding the requirements, rules, application forms and costs for phase C is available from the various testing stations (see Annexure C). Application forms for phase C tests can also be submitted via BeefPro.

18.1.4. Phase D

Phase D mainly comprises growth tests on the farm, under supervision of the ARC. The minimum number of bulls are 10 per test. Phase D1 is a test with one breeder's bulls and phase D2 is a test with more than one breeder's bulls. The age margin per test is 100 days. At D1 no weight margins are set but at D2 the margin is 75 kg between the lightest and the heaviest calf. Various options with regard to feed, depending on the needs of the breeder, are available:

- An intensive test where calves are fed a feedlot-type ("warm") ration. Adjustment must start as soon as possible after weaning but before the oldest calf is 12 months old. The adjustment period is minimum 21 days. The testing period (after adjustment) is 84 or 112 days. From this, figures are obtained for ADG, Kleiber (an adaptation of feed efficiency) and ADA (average daily gain per age). Start adjustment period about 2 weeks after the last calf has been weaned.
- A semi-intensive test is a test where calves are fed in a camp. Adjustment must start as soon as possible after weaning but before the oldest calf is 12 months old. The adjustment period is minimum 21 days. The testing period (after adjustment) is 112 or 140 days. From this, figures are obtained for ADG, Kleiber and ADA. Start adjustment period about 2 weeks after the last calf has been weaned.

- An extensive test is a field test where calves are tested in a veld camp. 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. 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.

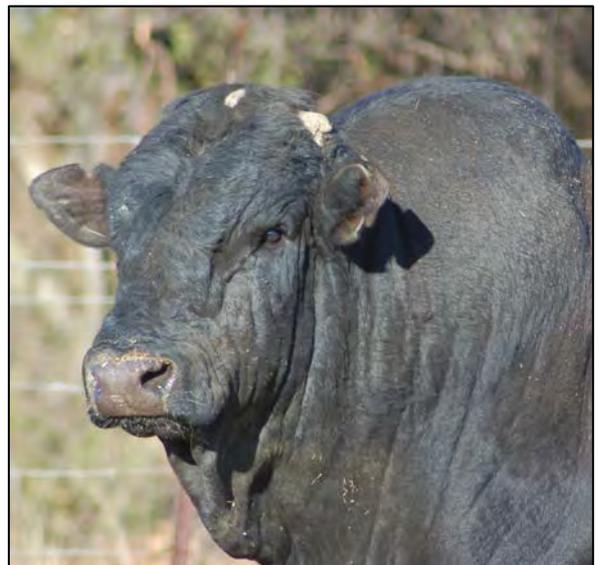
Adjustment weight (empty belly) and starting weight (also empty belly) should be taken the day before the test starts and again on day 1. The average weight is taken as starting weight. Weigh all the animals in the test every 14 days and at the end of the test again on day 1 and 2 with the average of the two as end weight. Day two weight is then also taken by an ARC official. Measurements for shoulder height, body length, hide thickness and scrotum circumference is also done by the ARC official. RTU scanning and functional pointing can also be done at an additional cost, but is optional. Comprehensive information regarding the requirements, rules, application forms and costs for phase D is available from the various regional offices (see Annexure C). Application forms for phase D tests can also be submitted via BeefPro. Herd consultations are also offered.

18.2. 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 BLUP 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 available, 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. The sign \wedge indicates that an animal is in the top 10% of its breed (just as the inverted sign indicates the bottom 10%). Trait predictors are also indicated. Explanatory notes will be included in the herd profile.



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 phase C and D 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 phase C and D 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 phase C.

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

The benefit of BLUP 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 Estimated Breeding Values (EBVs) - Annexure B.

Attending a BLUP course is highly recommended in order to be informed to confidently make the right decisions. The unit is based in Irene (contact information in Annexure C).

Information thanks to the ARC.

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

18.3. ARC Best Producing Cow Award - Requirements

- (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 National Beef Recording and Improvement Scheme 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 ARC calculated estimated breeding values from a BLUP 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 INTERGIS at run rate of the Best Producing Cow award will always be used.

- (ix) Minimum number of calves with reliable weaning weights:

Elite award	:	7 calves
Superior award	:	6 calves
Excellent award	:	5 calves

18.4. Requirements for Preference Awards to Drakensberger cows

- (i) Cow must be alive on report run date of the Preference Awards report.
- (ii) Cow must be owned by an active National Beef Recording and Improvement Scheme 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 ARC calculated estimated breeding values 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 INTERGIS at run rate of the Preference Awards will always be used.

(x) Minimum percentage approved progeny:

Preference A award	:	At least 70% progeny* approved.
Preference B award	:	At least 60% progeny* approved.
Preference C award	:	At least 50% progeny* approved.

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

19. 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 vibriosis. Decide whether you will be making use of AI (artificial insemination) and make the necessary arrangements with the veterinarian. Enquire at the office about the availability of semen.

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, 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. It is very important to send AI lists to Studbook after mating time. It can also be submitted electronically by means of an appropriate management software package.

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 Studbook 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:

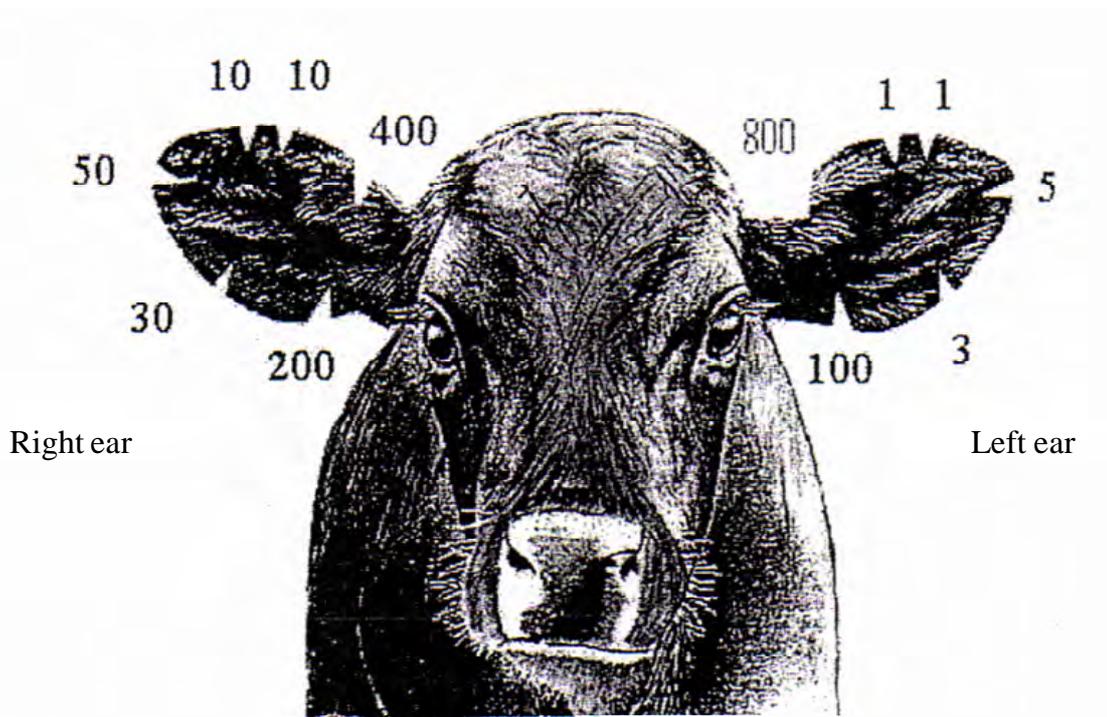


Figure 2: Examples of markings.

Births: As calves are born, they have to be recorded. Pocket notebooks in which birth details and weights can be recorded, are available from the ARC. Birth notifications for all calves must be submitted to SA Studbook within 90 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 and (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 the ARC 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 ARC. 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.

Phase C and D: Select bull calves for phase C and D. Phase C and D tests are optional. If bulls are not tested in phase C or D, they must, like the heifers, be weighed at 12 and 18 months and the data must be sent to the ARC.

Yearlings: Weigh heifers and bulls not being tested in phase C or D, 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 phase C or D, 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. Ensure that the inspection form is completed in three-fold, including all necessary information. The forms can be downloaded from Logix, printed from BeefPro or requested from the office. Birth notifications must be available together with the inspection forms on the day of the inspection. 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 the certificates, and will sign the documents. The inspectors take one copy with them for the office, one copy together with the certificates are sent to SA Studbook by the member and one copy remains the member's. All information regarding first acceptance goes to SA Studbook via the office.

Transfers and Cancellations: The seller of registered animals is responsible for the transfer of the animals to the buyer. This is done by completion of the transfer-section on the back of the registration certificate of the animal in question. After completion, the certificates must be sent to SA Studbook for formal transfer and the issue of a new registration certificate to the new owner. Similarly, the cancellation section on the back of the registration certificate of an animal that must be removed from the register, must be completed and sent to SA Studbook. Both transfers and cancellations can be done electronically by means of a suitable management software package.

Requirements for membership: See Annexure C.

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.

Auctions: All auctions are done under auspices of the breeders' society. What does it entail? Club auctions are arranged by the various clubs and are subject to the club's rules. Any member may offer at least one bull at club auctions. Clubs are responsible for all arrangements. Production auctions and group auctions are organised by one or more breeders. They are responsible for all the arrangements. Inter-breed auctions are arranged by the various 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 Studbook after

which Studbook compiles the catalogue and returns a preliminary 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 Studbook, 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. The registration certificate as issued by SA Studbook.
2. 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 which have serviced cows, to be tested for Trichomoniasis.
3. In the case of female animals, the brucellosis and tuberculosis certificates must be available.
4. The certificate confirming an animal's gestational status, issued by the veterinarian.

Clubs: See Annexure C.

Marketing: An annual calendar is available, with information of all members per province, as well as the auction dates for the year. The calendar is sponsored by advertisers. Application to advertise in the calendar must be made timeously.

Two newsletters are compiled annually by the office. The success of the newsletters is dependent on information and contributions from members and other interested parties. Advertisements can also be placed.

Inserts are also placed in the Farmers' Weekly on a regular basis, and once again advertisers carry the full cost of such an insert. We also make use of external advertisers to help share the costs. Journals are also published from time to time. A memorial journal is envisaged.

Articles and advertisements are printed in various publications on a regular basis. Examples are: Landbouweekblad, Farmers' Weekly, Grain SA, Studbreeder, Beeld, Agri Trader, Veeplaas, RPO (Red Meat Producers' Organisation) magazine and various web pages. Pamphlets are compiled annually and printed for distribution.

Marketing material is provided to each club, to be exhibited during information days, shows, exhibitions and auctions. Large information boards have been erected next to various main routes. Name boards which reflect at night are also available from the office and can be erected at farm entrances. The logo is already on both sides and a member can only add his/her details and an image of his/her show bull. The office also supplies caps with the Drakensberger logo, pocket and lapel badges, door stickers, key holders and license disk stickers.

20. Annexures to the handbook

ANNEXURE A: Catalogue discussion.

ANNEXURE B: Estimated Breeding Values.

ANNEXURE C: General information and contact details.



Annexure A: Catalogue description

Use a standard catalogue of SA Studbook, notes under heading BLUP and also Annexure B - Estimated Breeding Values.

The information contained in catalogues and profiles, are only possible through the accurate measurement of weights and dimensions by dedicated breeders and officials of the ARC, and the processing and recording of the ARC and SA Studbook.

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: Studbook 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. The number between brackets (00) shows the number of calves the cow has had already. AFC: Age of the cow at first calving, in months. Appendix Register A cows' AFC will not be known.
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> . Breed average: 0.11 kg and maternal: -0.29 kg.
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> . Breed average: 1.6 kg and maternal: -0.3 kg.
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> . Breed average: 0.8 kg and 18 months : 10.0 kg.
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 phase C or D. 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> . Breed average: 43 g/day and FCR: 51 g/kg.

CATALOGUE ENTRY	DESCRIPTION
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 phase C. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>FCR</i> . Breed average: 51 g/kg (note - the lower, the better).
Kleiber	This is an indirect adaptation of feed conversion efficiency. Information will only be available if animal was tested in phase D. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>Kleiber</i> . Breed average: 234.
Scrotum	Scrotum circumference as measured at the end of phase C or D tests in mm. Information will only be available if the animal was tested in phase C or D. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>Scrotum</i> . Breed average: 6.6 mm - refer to Selection on Breeding Values.
Length and height	Shoulder height and body length as measured at the end of phase C or D tests, in mm. Information will only be available if animal was tested in phase C or D. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>Height and Length</i> . Breed average: Height 0 mm and Length 4 mm.
Calving tempo	Breeding values: Refer to the section on BLUP as well as Annexure B - <i>Calving tempo</i> . Breed average: 19.9.

Annexure B: ESTIMATED BREEDING VALUES

ESTIMATED BREEDING VALUES (EBVs)								
Attribute	EBV (Unit)	Description	Extreme and Negative EBV (-)	Extreme and Positive EBV (+)	Desired EBV's			General selection guidelines (Note: goals may sometimes differ)
					Extr (-)	Ave	Extr (+)	
Reproduction	Calving rate (calves/100 daughters)	Fertility/retention of daughters (measured in number of calves).	Daughters have little or no calves.	Daughters calved each year up to age 6 years.				Select high calving rate EBVs for profitable, fertile daughters.
	Scrotum (mm)	Scrotum circumference of bull at the end of phase C or D.	Small scrotum.	Big scrotum.				Avoid extreme Scrotum EBVs for fertile bulls and offspring.
Birth	Birth weight - direct (kg)	Calf's genetic ability for birth weight.	Calf too small.	Calf too big and heavy.				Select average Birth-direct and Birth-maternal EBVs for strong calves which are not too heavy at birth.
	Birth weight - maternal (kg)	Mother's influence on calf's birth weight.	Calf too small.	Calf too heavy.				
Growth rate	Weaning - direct (kg)	Calf's genetic ability for weaning weight.	Light weaning weight.	Heavy weaning weight.				Select high Weaning-direct EBVs for heavy weaners.
	Weaning - maternal (kg)	Mother's ability to look after her calf (mainly milk).	Light weaning weight due to too little milk.	Heavy weaning weight due to too much milk.				Select Weaning-maternal EBVs for cows with good mothering characteristics.
	Year weight (kg)	Animal's genetic ability for year weight.	Small, light animal.	Big, heavy animal.				Select average Yearling EBVs for average sized animals.
	18 month weight (kg)	Animal's genetic ability for 18 month weight.	Small, light animal.	Big, heavy animal.				Avoid extremities for 18 Month EBVs.
	ADG (Average daily gain) (g/day)	Growth ability, daily weight gain, after weaning.	Poor growth (gain little weight).	Gain a lot of weight per day after weaning.				Select high ADG EBVs for good post-weaning growth.
	Adult weight (kg)	Animal's genetic ability for adult weight.	Low adult weight.	High adult weight.				Select average adult EBVs for average sized animals.
Growth Efficiency	Feed conversion (g/kg)	Kg feed consumed per kg weight gained.	Consumes little feed per kg weight gain.	Consumes a lot of feed per kg weight gain.				Select LOW feed conversion EBVs for economic growth.
	Kleiber ratio	Metabolic growth efficiency.	Low growth efficiency.	High growth efficiency.				Select high Kleiber EBVs for metabolic efficiency.
	Intake (g/day)	Quantity feed consumed per day.	Low intake.	High intake.				Avoid extreme intake breeding values.
	Feedlot Profit Index (FPI) (Rand)	Combination of traits predicting generic profit in feedlot.	Loss in feedlot.	Profit in feedlot.				Select high feedlot profit indices for high profit in the feedlot.
Frame Size	Height (mm)	Height of animal	Pony type.	Elephant.				Select animals with average EBVs for shoulder height.
	Length (mm)	Length of animal measured from shoulder knob to pin bone.	Short bull (poor length/height).	Long bull (good length/height).				Select animals with good length/height ratio.

ANNEXURE C: GENERAL INFORMATION AND CONTACT DETAILS

GENERAL ENQUIRIES: OFFICE

The Drakensberger Cattle Breeders' Society of South Africa
PO Box 273, Volksrust, 2470

Tel: (017) 735 5056/8

Fax: (086) 583 0825

E-mail : info@drakensbergercbs.co.za

www.drakensbergers.co.za

DRAKENSBERG BREEDERS' SOCIETY

Requirements for membership:

Members of the Drakensberger Cattle Breeders' Society must also be members of SA Studbook and the ARC National Beef Recording and Improvement Scheme. To join the breeders' society, the necessary application forms for the breeders' society, SA Studbook and ARC National Beef Recording and Improvement Scheme 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.

Description of the costs (can change in future):

Valid from 01-07-2011 to 30-06-2012

	Description	Cost
Breeders' Society	Enrolment fee	R250.00 (once-off)
	Annual member fee	R600.00
	Registered postage	R20.00 (Notification of Annual General Meeting)
	Annual fee calendar	R100.00
	Per capita annually	R52.50 per animal over 12 months on 1 July
	New members joining with new animals (Appendix Register A animals) are subsidised for the first three years with 50% of the levy, therefore R26.25 per animal.	
	Pro rata cost w.r.t. levies for new members who join during the year.	
	Inspection cost	As discussed under "Inspections".
	Special inspections	Travel and accommodation cost of inspectors.
	Advertisements	Calendar, news letters and inserts as determined from time to time.
SA Studbook	Enrolment fee	R541.50 (1st year all inclusive).
	Annual herd fee	R250.00
	Direct handling	R250.00
	Per capita annually	R10.70 per live animal on system on 1 July.
ARC	Enrolment fee	R678.88 (1st year all inclusive).
	Annual herd fee	R192.14
	Annual <i>per capita</i> fee (electronic option)	R3.20 per live animal on system on 1 July (electronic option).
	Annual <i>per capita</i> fee (paper option).	R5.14 per live animal on system on 1 July (paper option).

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, an ARC representative 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 (as telecons) are held monthly, except for the months when board meetings are held. Five board meetings are held annually.

The board currently consists of:

- Dr. Johann Fourie (President)
- Magiel Blom (Vice-president)
- Reinier van Rensburg
- Edwin Schroeder
- Rodney Neuman
- Johan Uys
- Piet de Villiers
- Fanie van Dyk
- Willie Landman
- Leslie Bergh (ARC departmental representative)
- Ms. Stienie Steenkamp (secretary)
- Pierre Uys (honorary president)
- John Roos (honorary president)

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.

Area	Base	Contact person	Contact number	E-mail address
KwaZulu-Natal (KZNDK)	Vryheid	Volkmar Böhmer (chairman)	082 944 0641	vh@boehmer.co.za
Eastern Transvaal (ETDK)	Ermelo	Johan Uys (chairman)	082 725 4862	bloemhof1@lantic.net
Southern Highveld (SHDK)	Vrede	Louis Botha	082 825 2431	louisbotha@zippnorth.co.za
Free State (FSDK)	Frankfort	Johan Rautenbach (chairman)	082 780 1189	jatro@zippnorth.co.za
Karoo (KDK)	Middelburg	Johannes Retief (chairman)	082 385 1821	gordonsfontein@karoomail.co.za
North West (NWDK)	Klerksdorp	Johan van Tonder	072 539 9704	johan.radora@yahoo.com

REGIONS

Regions are assigned to board members and any enquiries from a region will be referred to the relevant board member. Board members are also responsible for the commercial breeders in that area.

Region	Board member	Contact number	E-mail address
Gauteng	Reinier van Rensburg	082 924 5728	gehardu@vodamail.co.za
Karoo/Eastern Cape	Carel Nel	082 828 1984	carelnel02@telkomsa.net
KwaZulu-Natal	Edwin Schroeder	082 457 6710	
Mpumalanga 1	Johan Uys	082 725 4862	bloemhof1@lantic.net
Mpumalanga 2	Piet de Villiers	073 143 3985	jkrag@webmail.co.za
North-West	Dr Johann Fourie	082 772 7716	johannfourie@intekom.co.za
Free State 1	Fanie van Dyk	082 774 4952	js.vandyk@mweb.co.za
Free State 2	Rodney Neuman	082 746 8142	neumanbros@xsinet.co.za

OTHER CONTACT INFORMATION

The National Beef Recording and Improvement Scheme: ARC Phase C Test stations:

Test Station	Person	Contact number	E-mail address
Irene (Pretoria)	Leon de Lange	012 672 9326	ldelange@arc.agric.za
Glen (Bloemfontein)	Lerato Maboja	051 861 1192	maboal@arc.agric.za
Armoedsvlakte (Vryburg)	Dolf Cloete	053 927 4335	dcloete@arc.agric.za
Cedara (Pierermatitzburg)	Johan Binedell	033 330 5668	binedellj@arc.agric.za
Stellenbosch	Tinus Viljoen	021 809 3327	viljoent@arc.agric.za

Private Phase C test stations are also located at Gawie Roux near Ventersburg (mainly Drakensbergers), Nooitgedacht at Ermelo and Sernick at Edenville, which is also popular under Drakensbergers.

All information regarding rules and the necessary forms w.r.t. testing (Phase A, B, C and D) are available from the respective ARC area offices. Herd consultations are also done.

Area Office	Contact number	Contact person/s
Irene	(012) 672-9052	Ben Greyling, Leslie Bergh, Erick Joosten, Stephen Rasebotsa
Bloemfontein	(051) 447-5629	Siebert Vermeulen, Bernard Burger, Rampie de Wet
Cedara	(033) 330-5668	Johan Binedell, Freek Botes
Vryburg	(053) 927-433/4335	Dolf Cloete, Tebogo Serapelwane
Stellenbosch	(021) 809-3396	Tinus Viljoen, Hendrik de Waal, Jakkie du Toit
Port Elizabeth	(041) 404-7200	Francois du Toit, Sakkie van der Merwe
Middelburg	(049) 842-2563	Arno van Graan

BLUP courses

Contact person: Zelda King at tel (012) 672-9023 or zelda@arc.agric.za.

Genetics testing at ARC Animal Improvement Institute, Irene

Contact person: Hannalize Swart tel (012) 672-9231 or Jill Aingworth (012) 672 9008.

Current cost per sample: R150.00

WEBSITES

Drakensberger Society	www.drakensbergers.co.za
SA Studbook	www.studbook.co.za
ARC	www.arc.agric.za
Logix	www.logix.org.za
BeefPro	www.beefpro.net
Studmaster	www.stoetmeester.co.za

