

DRAKENSBERGER

GENOMIC BREEDING VALUE REPORT

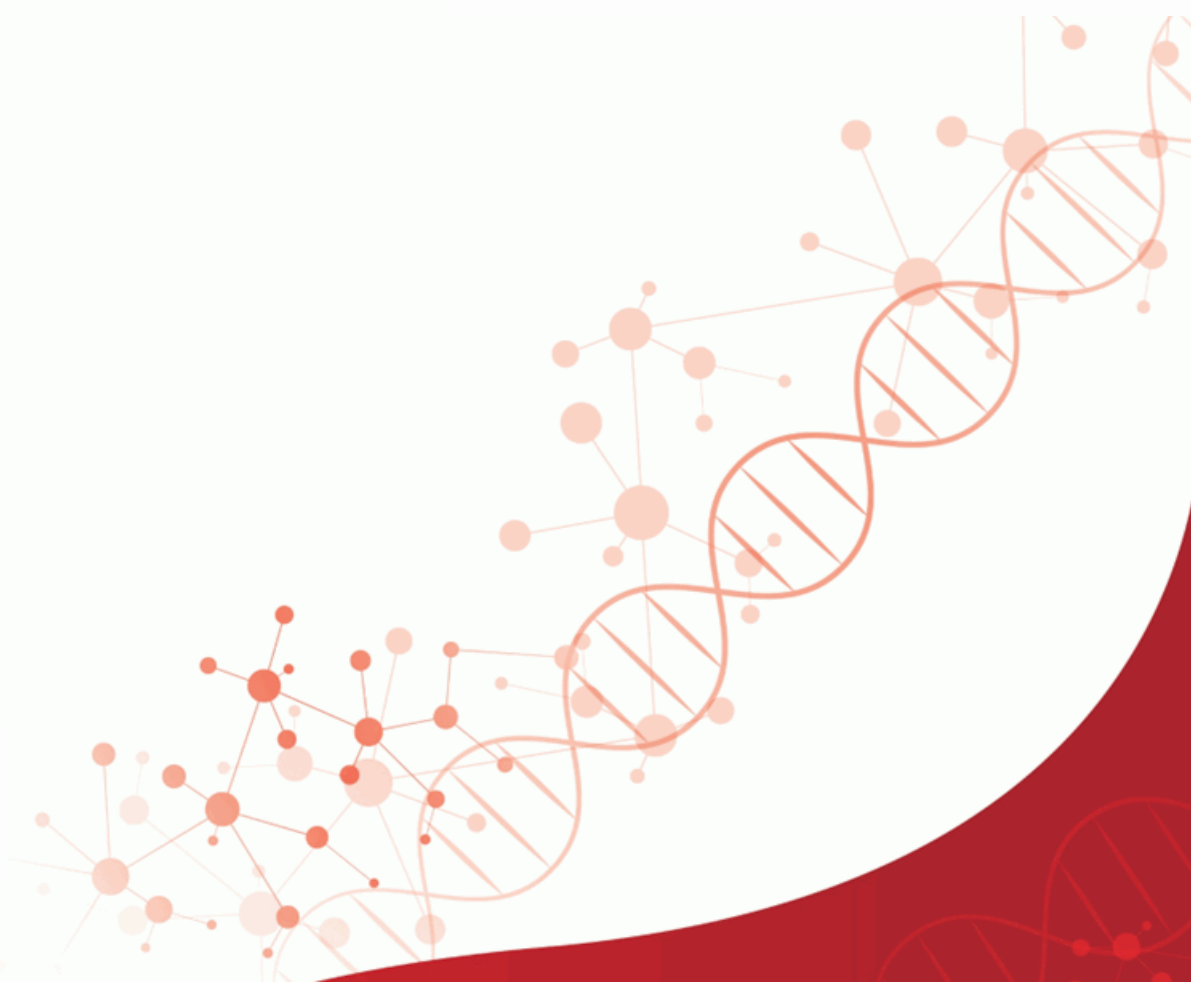
September 2026



SMOKEY MOUNTAIN TRADING

Herd Number: 730668

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EBVs, EBVi's and GEBVs

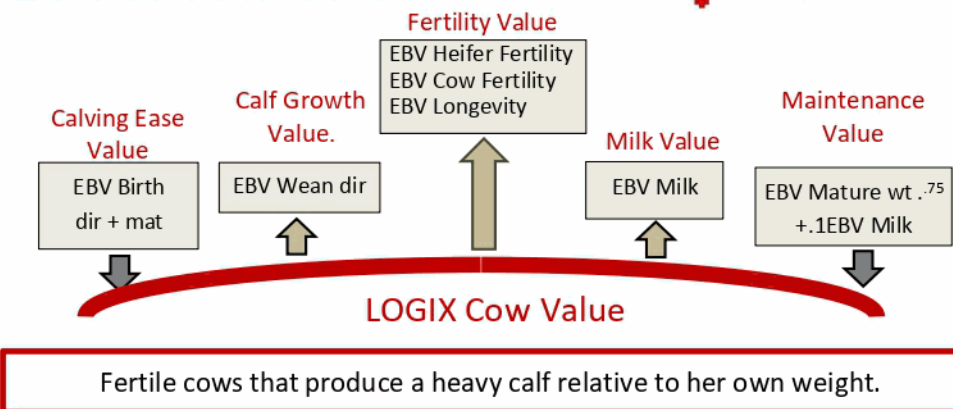
EBVi (Breeding Value Index): Genetic potential relative to the average (100) of the live (active) animals in the breed. Roughly 50% of the animals have values between 90 and 110. Values above 100, depending on the trait, tend to be in the more favourable direction.

EBV (Breeding Value): Genetic potential relative to the average of the animals born in the base year (1990), expressed in the unit of measurement.

GEBV (Genomic Breeding Value) Interpreted like the EBVi. (GEBV = EBV + Genomic information)

LOGIX Selection values combine different breeding values in a logical way. For example, Heifer Fertility (how early a heifer starts calving), Cow Fertility (how regular she calves) and Longevity (retention within the family) are combined to form the Fertility Value.

LOGIX Cow Value



Selection Values

LOGIX Cow Value



Selecting for:

- fertile,
- low maintenance,
- easy calving cows
- with heavy weaners

LOGIX Growth Value



Select for efficient growers on veld and in feedlot, as measured in Phase C and D Growth Tests.

LOGIX Production Value



80% LOGIX Cow Value +
20% LOGIX Growth Value

LOGIX Carcass Value



Select for more meat on the carcass as measured from end weight in Phase C and D Growth Tests and RTU scanning.

How to use the Cow Value

Selection values should be compatible with your selection goal.

AVERAGE ANIMALS

(NO GROWTH EXTREMES)

- Selection Values 90 to 110
 - Cow Value and Fertility Value average to high
- A safe choice, as animals are profitable in most environments.

GROWERS

(GOOD ENVIRONMENT)

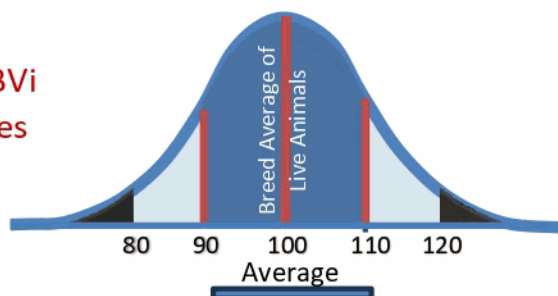
- WeanerCalf / Growth Value > 120
 - Cow Value and Fertility Value average to high
- Growers are usually heavier at birth (lower Calving Ease Value), and maturity (lower Maintenance Value).

LOW- MAINTENANCE ANIMALS

(HARSH ENVIRONMENT)

- Maintenance Value >110
 - Cow Value and Fertility Value average to high
- Lighter cows have a lower maintenance.

Interpretation of EBVi and Selection Values



Examples

Type of Animal	Cow Value	Calving Ease V	Weaner Calf V	Milk Value	Maint. Value	Fertility Value
Average	Med-High	Avg	Avg	Avg	Avg	Med-High
Grower	Med-High		High			Med-High
Low Maintenance	Med-High				High	Med-High

Contemporary Groups

The correct composition of contemporary groups is one of the cornerstones of BLUP breeding value estimation. Breeding values are estimated from the differences between animals exposed to the same environment, *as these differences are caused by genetics*. The following aspects are important:

1. Animals at the same time, place and treatment

A contemporary group is a comparable group of animals measured at the same time in the same environment. It is therefore a comparable group of animals that were together on the same farm or camp in the same year and season. If there are animals in the group that were treated differently, they should be given a separate treatment code because their performance is influenced by other environmental influences than the rest of the group. Examples of possible different treatments are when some animals received supplements or creep feed, sale or show animals, embryo donors, sick or foster calves or even purchased cows and calves. If bull and heifer calves or older cows and young heifers were in the same camp, they should be placed in the same group – corrections for sex, age and first calving of cows are automatically made during breeding value estimation.

2. Progeny of at least two sires, of which one is a link sire

The progeny of different sires needs to be compared in the same group in order to determine the sires' genetic merit relative to each other. At least one sire should be a link sire with progeny in other herds. Genetic links between herds are used to determine the position of sires in the breed. All sires are good link sires. Smaller herds could artificially inseminate some cows or allow some cows to be covered by another herd's bull.

3. Larger groups stabilise Breeding Values

Larger groups result in more accurate and stable breeding values, as the mean and distribution of the group can be more accurately determined and are thus more representative. Groups should preferably have more than 5 animals. Weigh all the animals in the same group on the same day, as corrections for age differences are made during genetic evaluation. The use of breeding seasons rather than through the year calving will also increase contemporary group size. Groups with less than 3 animals are not included in breeding value estimation. An accidental mistake in a small group affects the animal itself, its family, all the other animals in the group and their families. The effect could be much less in large groups.

4. Measure all animals in the contemporary group

Weigh ALL the animals in the contemporary group, the good as well as the poor performers. Weigh animals before they are culled, so their parents can be penalized for their poor breeding.



Herd and Breed Averages

130

120

110

100

90

80

70

	Trait	EBV Herd	EBV Index	EBV Breed
Prewean Growth	Birth Weight			
	Wean Weight			
	Birth Mat.			
	Milk (Wn.Mat.)			
Postwean Growth	Postwean Wt			
	Mature Weight			
	ADG			
	FCR			
Fertility	Scrotal Circumf.			
	Heifer Fertility			
	Cow Fertility			
	Longevity			
Frame	Height			
	Length			
Carcass	EMA			
	Fat			
	Marbling			

Selection Value	Ave. Herd
Calving Ease	
Calf Growth	
Milk	
Maintenance	
Fertility	
Cow Value	
Growth Value	
Production Value	
Carcass Value	

Breeding Values:

Birth:	Birth weight	Scr:	Scrotal circumf.
Wean:	Weaning weight	HF:	Heifer Fertility
Birthm:	Birth maternal	CF:	Cow Fertility
Milk:	Milk	LL:	Longevity
PW:	Post-wean weight	Hght:	Height
MW:	Mature weight	Lngth:	Length
ADG:	Average Daily Gain	Dr%:	Dressing%
FCR:	Feed Conversion Ratio	RMV:	Red Meat Yield
		Marb:	Marbling

Selection Values:

CEV:	Calving Ease Value
CGV:	Calf Growth Value
MilkV:	Milk Value
MV:	Maintenance Value
FV:	Fertility Value
CowV:	Cow Value (CV)
GrowthV:	Growth Value (GV)
ProdV:	Production Value (PV)

- Average of live animals in the breed: 100
- Above 100: **more favourable**,
- Below 100: **less favourable**

What does a sub-selection value above breed average (100) mean?:

Calving ease:	Smaller calf at birth - easier calving
Calf growth:	Heavier calves at wean due to growth potential of the calf
Milk:	Cows with more milk and better mothering ability
Maintenance:	Animals with low maintenance requirements (lower mature weight).
Fertility:	Cows/daughters that calve

Genetic Windows

Bulls on the farm

Bulls born in and earlier that are available for natural mating	
130	
120	
110	
100	
90	
80	
70	

Animals available for breeding

Total:	Cows born in and earlier
	130
	120
	110
	100
	90
	80
	70

Cow Herd

Total:

Sires of young animals

Sires (Natural mating and AI) of animals 3 years and younger	
130	
120	
110	
100	
90	
80	
70	

Results of previous selection decisions

Total:	Cows born in and earlier
	130
	120
	110
	100
	90
	80
	70

Cows older than 6 years

Total:

Selection possibilities

Bull calves

Bulls born in	
130	
120	
110	
100	
90	
80	
70	

Total:

Heifer calves

Heifers born in 2025		Total: 1
130		
120		
110		
100		
90		
80		
70		

Summary of Cow Herd

			Selection Values (SV)								Calf Weight		Dam		Growth & Efficiency				Fertiity				Frame	
Birth Year	No. Cows	Average Cow Value	Calving Ease	Calf Grwth	Milk	Maint.	Fertility	Cow Value	Growth Value	Prod Value	Birth Weight	Wean Weight	Birth Mat.	Milk (Wn.Mat)	Postwn Weight	Mature Weight	ADG	Kleiber	Scrotal Circumf.	Heifer Fertility	Cow Fertility	Longevity	Height	Length
			Cows in Breed Average:										100	100	100	101	101	101	99	100	100	100	100	100
2015	1																							
2016	1																							
2018	1																							
2019	4																							
2020	2																							
2021	4																							
2022	1																							
2023	7																							
2024	11																							
2025	1																							

Cows in Herd Average:

Genetic Trends for On-Farm Traits

The graphs show the genetic gain of the herd relative to the breed. Only data of animals with measurements are included.

Herd

Birth Year	Calving Ease			Calf Growth			Milk			Maintenance				Fertility						Cow Value	
	Birth Weight		Calv. Ease	Weaning Weight		Calf Growth	Milk (Wn.Mat.)		Milk	Postwean Weight		Mature Weight		Maintenance	Heifer Fert.		Cow Fert.		Longevity		Ferti- lity
	Number	EBV		Number	EBV		Number	EBV		Number	EBV	Number	EBV		Number	EBV	Number	EBV	Number		EBV

Breed

Birth Year	Calving Ease				Calf Growth			Milk			Maintenance					Fertility								Cow Value
	Birth Weight		Mat EBV	Calv. Ease	Weaning Weight		Calf Growth	Milk (Wn.Mat.)		Milk	Postwean Weight		Mature Weight		Maintenance	Heifer Fert.		Cow Fert.		Longevity		Fertility		
	Number	Dir EBV			Number	EBV		Number	EBV		Number	EBV	Number	EBV		Number	EBV	Number	EBV	Number	EBV		Number	
2016	3646	0.21	0.12	100	2841	9.8	99	2841	1.58	95	2243	18.0	536	11	101	786	-0.9	490	-1.6	4039	18.4	96	92	
2017	3747	0.22	0.09	100	2879	10.7	100	2879	1.88	96	2328	19.3	551	12	101	731	-1.1	516	-2.1	4171	18.7	98	94	
2018	4020	0.24	0.13	99	3347	10.5	100	3347	1.94	96	2574	19.5	538	13	100	750	0.0	524	-2.2	4320	18.8	97	93	
2019	3716	0.16	0.11	100	3312	9.8	99	3312	2.49	98	2449	19.4	499	12	101	743	-3.0	485	-2.0	4312	19.0	101	95	
2020	4077	0.11	0.10	101	3575	9.9	99	3575	2.62	98	2781	19.0	510	10	101	772	-2.6	446	-2.4	4146	19.5	101	96	
2021	4035	0.14	0.09	100	3588	9.8	99	3588	2.80	98	2633	18.8	482	11	100	679	-2.1	369	-2.3	3913	19.6	101	96	
2022	4015	0.16	0.10	100	3442	10.3	100	3442	3.11	99	2315	21.0	400	13	99	558	-1.5	29	-3.3	1635	19.2	102	98	
2023	4207	-0.03	0.10	102	3319	9.9	99	3319	3.19	100	2252	20.6	53	10	99	201	-1.3					100	98	
2024	3580	-0.07	0.13	102	3060	10.0	99	3060	3.46	100	2232	20.1			99	7	-1.8					93	99	
2025	3286	-0.02	0.14	101	2447	9.5	98	2447	3.55	101	207	13.3			104								99	
2026	694	-0.11	0.07	103	19	14.0	107	19	2.57	98													95	

Genetic Trends for Growth Test Traits

Herd

Birth Year	Growth									Frame						Carcass						Selection Values			
	FCR			ADG			Scrotum			Height			Length			EMA			Fat		Marbling		Carcass Value	Growth Value	Prod Value
	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi	RTU Number	EBV	EBVi	EBV	EBVi	EBV	EBVi			

Breed

Birth Year	Growth									Frame						Carcass						Selection Values			
	FCR			ADG			Scrotum			Height			Length			RTU Number	EMA		Fat		Marbling		Cracss Value	Growth Value	Prod Value
	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi		EBV	EBVi	EBV	EBVi	EBV	EBVi			
2017	81	-67	110	594	85	103	560	13.2	104	551	1	103	551	15	103	384	0.51	100	-0.04	102	-0.02	97	101	100	95
2018	115	-66	109	553	97	107	507	13.3	104	469	4	107	469	18	107	290	1.00	105	-0.27	99	0.17	100	103	103	96
2019	104	-60	106	545	99	107	532	13.2	103	341	2	103	341	17	105	311	1.58	111	0.19	105	0.15	100	108	103	99
2020	116	-59	105	714	89	104	687	13.6	104	504	1	102	505	15	103	438	0.97	105	0.09	104	0.11	99	106	101	97
2021	108	-72	113	739	81	102	742	12.6	102	648	2	104	648	16	104	345	1.05	106	-0.39	98	0.03	98	106	100	96
2022	74	-78	117	651	92	105	630	13.5	104	401	1	102	401	15	103	280	1.07	106	0.32	106	0.37	104	109	102	99
2023	94	-69	111	663	98	107	657	14.4	106	617	4	107	617	20	108	350	1.16	107	0.19	105	0.24	101	108	104	100
2024	82	-74	114	449	104	108	639	12.4	102	400	2	104	400	18	106	316	1.46	109	0.01	103	0.19	101	110	107	104
2025	1	-23	85	2	14	86	5	12.8	103	5	-1	99	5	7	94	1	1.84	113	-4.77	44	0.11	99	89	94	90
2026																									

Sires

Bull				Selection Values							Calf		Dam		Growth				Fertility				Frame		Carcass			Measured Progeny		
ID	Index EBV Acc		Sire ID Dam ID	Calv.	Calf	Milk	Maint.	Fertility	Cow	Growth	Prod	Birth	Wean	Birth	Wean	Post wn	Mature	ADG	FCR	Scrotal	Heifer	Cow	Long-evi	Height	Length	EMA	Fat	Marbling	Birth	Wean
				Ease	Grwth	Value	Value	Value	Value	Value	Value	Value	Dir	Dir	Mat.	Mat.	wt	weight												
Name				Value	Value	Value	Value	Value	Value	Value	Value																		Test	

Breeding Values and Accuracies: Bulls

Inbreeding in red is high

Value <80 Value >120

Breeding values with an accuracy < 5% are not printed

Animal				Selection Values									Birth		Wean				Growth			Fertility				Frame		Carcass																								
Index EBV Acc	% Inbreeding	Sire ID	Dam ID	Calv.	Ease	V	Calf	Growth	V	Milk	V	Maint.	V	Fertility	V	Cow	Value	Growth	Value	Prod.	Value	Carcass	Value	Birth	wt	dir	Birth	mat	Mature	wt	Wean	wt	Wean	mat	Cow-Calf	Ratio (Wean)	Postwean	wt	ADG	FCR	Scrotal	Circ.	Heifer	Fertility	Cow	Fertility	Longevity	Height	Length	EMA	Fat	Marbling

Breeding Values and Accuracies: Cows

Inbreeding in red is high

Value <80 Value >120

Breeding values with an accuracy < 5% are not printed

Animal			Selection Values							Birth		Wean				Growth			Fertility				Frame		Carcass				
Index EBV Acc	% Inbreeding	Sire ID Dam ID	Calv. Ease V	Calf Growth V	Milk V	Maint. V	Fertility V	Cow Value	Growth Value	Prod. Value	Carcass Value	Birth wt dir	Birth mat	Mature wt	Wean wt	Wean mat	Cow-Calf Ratio (Wean)	Postwean wt	ADG	FCR	Scrotal Circ.	Heifer Fertility	Cow Fertility	Longevity	Height	Length	EMA	Fat	Marbling
ID																													
Number																													
Name																													

Selection List on Cow Value
Cows 2 years and older

ID	Name	Sire ID	Dam ID	% Inbreeding	Horned / Polled	Myostatin				Calving Ease Value	Calf Growth Value	Milk Value	Maint. Value	Fertility Value	Cow Value	Growth Value	Prod Value	
Sorted on ID						nt821	Q204X	F94L	Genomic tested	Acc	Acc	Acc	Acc	Acc	Acc	Acc	Acc	

Selection List on Cow Value
Heifers younger than 2 years

ID	Name	Sire ID	Dam ID	% Inbreeding	Horned / Polled	Myostatin				Calving Ease Value	Calf Growth Value	Milk Value	Maint. Value	Fertility Value	Cow Value	Growth Value	Prod Value	
Sorted on ID						nt821	Q204X	F94L	Genomic tested	Acc	Acc	Acc	Acc	Acc	Acc	Acc	Acc	

	EBVi	Description / Measurement	Goal	Low Value	High Value
Selection Values	Calving Ease Value	Difficult calving due to high birth weight	Average birth weight	High	Low
	Calf Growth Value	Calf's genetic ability for prewean growth	Heavy weaner	Light	Heavy
	Milk Value	Cow's genetic mothering and milking ability	Enough milk for calf	Less	More
	Maintenance Value	Maintenance requirement of cow (weight and milk)	Low cow maintenance	High	Low
	Fertility Value	Fertility and retention of cows and heifers	Fertile cows	Low	High
	Cow Value	Combination of calving ease, calf growth, milk, maintenance and fertility values (Rand-value per Ha)	Profitable cows	Loss	Profit
	Weaner Calf Value	Heavier weaners and more milk, with lower birth and cow weights	Heavy weaner	Light	Heavy
	Growth Value	Efficient growth on veld and in feedlot (Rand-value per animal)	Profitable growth	Loss	Profit
	Production Value	Combination of Cow- and Growth Values (Rand-value)	Profitable animals	Loss	Profit
	Carcass Value	Meat on carcass (Weight and RTU EBVs)	Meat on carcass	Less	More
Birth	Cow weight - birth	Cow weight at birth of calves	Mature cow weight	Light	Heavy
	Birth weight direct	Birth weight (Calf's genetic ability)	Average birth weight	Heavy	Light
	Cow-Calf birth	EBV Birth dir / EBV Mature cow weight	Average	Low	High
Wean	Cow Weight wean	Cow weight at weaning of calves	Mature cow weight	Light	Heavy
	Weaning weight direct	Weaning weight (Calf's genetic ability)	Heavy weaners	Light	Heavy
	Weaning weight mat	Weaning weight (Dam's genetic ability)	Good mothers	Poor	Good
	Cow-Calf Wean	EBV Wean dir / EBV Mature cow weight	High cow-calf ratio	Low	High
Growth & Adaptation	Post-Wean weight	12- and 18mnth weights	Post-wean growth	Low	High
	Ave. Daily Gain	Average daily gain in growth test (Phase C and D)	Good growth	Poor	Good
	Veld Growth	ADG on veld (Phase B)	Good adaptation	Poor	Good
	Feed Conversion Ratio	100g feed intake /g weight gain	Feed Efficiency	Poor	Good
	Final Test Weight	Final weight in growth test (Phase C and D)	Heavy Carcasses	Light	Heavy
	Skin Thickness	Measured in growth tests	Thicker skin	Thin	Thick
Fertility	Scrotal Circumference	Scrotal circumference in growth test	Fertile bulls	Less	More
	Heifer Fertility	Age at first calving	Fertile heifers	Less	More
	Cow Fertility	First 3 inter-calving periods (ICPs)	Fertile cows	Less	More
	Longevity	Retention of progeny	Acceptable progeny	Poor	Good
Frame	Height	Shoulder / Hip height in growth test	Average height	Short	Tall
	Length	Length in growth test	Longer (more meat)	Short	Long
	Length:Height	EBV Length / EBV Height	Longer, not higher	Less desirable	More desirable
Carcass	Eye Muscle Area	RTU Eye muscle area	Muscle in carcass	Small	Big
	Fat	RTU P8 Backfat Thickness	Carcass quality & adaptability	Thin	Thick
	Marbling	RTU % Marbling	Juicy meat	Low	High
	Dressing%	Carcass weight / Live weight	High dressing %	Low	High

Notes on the interpretation of EBVs, EBVi's, sub-values and selection values

EBVi (EBVindex) is the breeding value index and is easier to interpret than the breeding value, especially for commercial farmers buying from stud farmers. The base of a breeding value index is 100, which is the average of all the live animals in the breed, and all values are expressed relative to this value. Values above 100 are always in a more desirable direction: an index of 105 for AFC indicates a genetic potential to calve earlier. Note that a very high index is not always desirable. For certain traits, such as birth weight, average values can be better.

EBV: (Estimated Breeding Value) indicates the genetic potential of the animal for a specific trait. It is presented in the unit of measurement and relative to the average of animals born in the base year (1990 for most breeds and traits). Higher values for certain traits are better while lower values for other traits are better, for example, an EBV of -2 for AFC (age at first calving) indicates that the animal has the genetic potential to calve 2 days earlier than the average heifer in 1990 (the base year). Earlier calving is better and therefore low breeding values (high breeding value indices) are better. For weaning weight, higher values are better.

Sub-values combine similar breeding values in a scientific manner to simplify the selection of animals. For example, AFC (age at first calving) and ICP (inter-calving period) are combined to form the sub-value Fertility by taking the heritability and economic importance in consideration. The sub-value is expressed in an index format, thus an animal with a sub-value of 110 for Fertility will genetically be above average compared to the live animals in the breed.

Selection Values (Cow Value and Growth Value) combine the sub-values into a single value. This gives a quick and easy indication of the combined genetic value of an animal compared to the breed. It is advised to still look at the sub-values to see where the strengths and weaknesses lie.

How to use breeding values to select animals

Selecting animals on breeding values is easy if you know how. There is a common saying that “good nutrition can mask poor breeding”. This is very true. If an animal that is genetically inferior is fed well, it can appear as a great animal. This great performance will not be passed over to future generations. An animal that is genetically superior can appear to be inferior if its environment did not allow it to reach its true potential. It is best to select animals that are most adapted to the environment and can reach their full potential. To continuously adapt the environment to the animal can be expensive.

The reason why the use of breeding values is such a valuable tool is because it “removes” the environmental effect that contributes to the performance.

Scientific methods are used to determine how much of the performance is due to genetics and to identify genetically superior animals. This involves the measurement of animals under controlled environments, complete record keeping and pedigree information. *If performance recording and pedigree information are not done correctly, breeding values of these animals will not be useful.* Keep in mind that breeding is a long-term option: the effect of a bull selected/bought today will only show much later. If it is a good decision, his daughters will become part of the breeding herd and contribute to overall profitability in future.

Even if a bull is not perfect in all aspects, knowing the shortcomings will allow strategic selection with suitable cows. Traits are genetically correlated, meaning that a change in one trait can lead to a change in another. This change can be favourable or unfavourable. An increase in weaning weight can lead to an increase in birth weight, which can lead to calving difficulty. It is therefore advisable to not only select on a single trait. Take other traits in consideration to avoid negative effects.

How to improve the herd genetically

The first and most important aspect is to know what type of animal will improve the herd genetically. This can be determined through the following factors:

What happens to the calves? For example: used as replacement heifers, sold as stud animals or sold to commercial breeders who sell weaner calves.

How much feed is available? The availability of feed (or the hardness of the environment) determines the optimal frame size. If feed is abundant and the environment is less harsh, larger animals would be ideal. If not, medium framed animals would be ideal.

What is the genetics of the cow herd? Are they the wrong frame type, grow too slowly, do not have enough milk, etc.? Always aim to breed a calf that is superior to its dam.

Conclusion

Different types of bulls are suitable for different types of cows, environments and breeding objectives. Inbreeding should be avoided or limited as much as possible. Mating programs are available to aid in the pairing of bulls and cows.

The data used for this evaluation is pedigree information and performance data found on LOGIX as provided by breeders. All attempts are made to present accurate information. SA Stud Book takes no responsibility for the use and interpretation of information presented in this report.

