

SANTA GERTRUDIS

GENOMIC BREEDING VALUE REPORT

July 2026



NCHEBE INVESTMENT PROPERTIES

Herd Number: 8649179

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EBVs, EBVi's and GEBVs

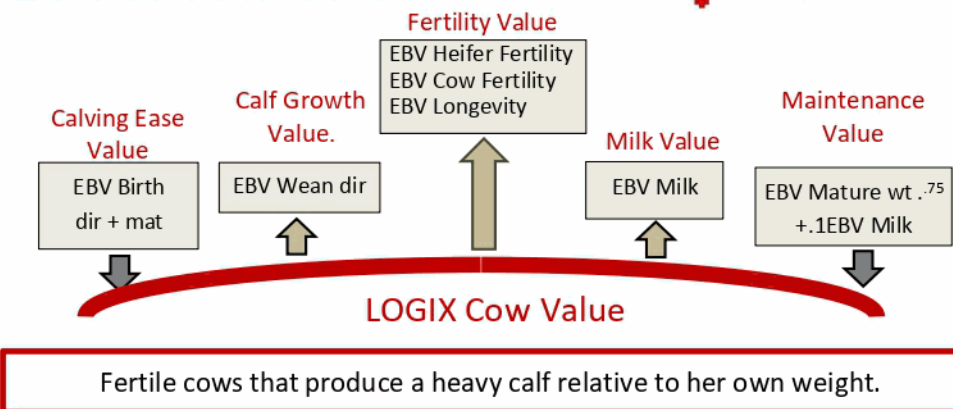
EBVi (Breeding Value Index): Genetic potential relative to the average (100) of the live (active) animals in the breed. Roughly 50% of the animals have values between 90 and 110. Values above 100, depending on the trait, tend to be in the more favourable direction.

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 Carcass Value



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

LOGIX Production Value



80% LOGIX Cow Value +
20% LOGIX Growth Value

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)

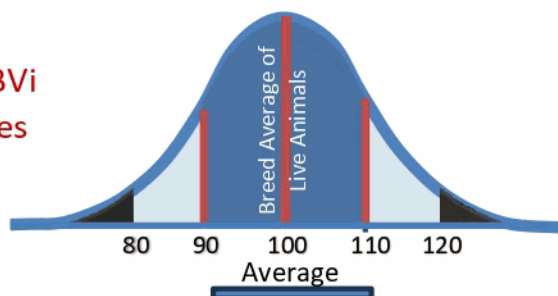
- WeanerCalf / Growth Value > 120
 - Cow Value and Fertility Value average to high
- Growers are usually heavier at birth (lower Calving Ease Value), and maturity (lower Maintenance Value).

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

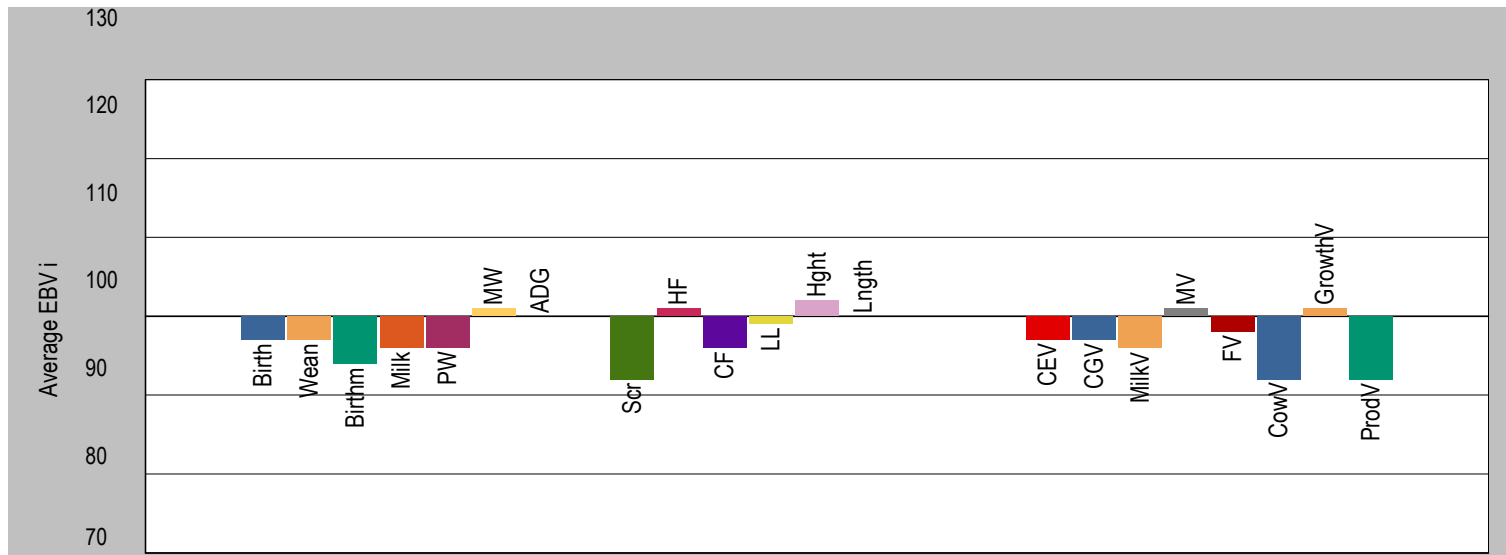
Larger groups result in more accurate and stable breeding values, as the mean and distribution of the group can be more accurately determined and are thus more representative. Groups should preferably have more than 5 animals. Weigh all the animals in the same group on the same day, as corrections for 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



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)

	Trait	EBV Herd	EBV Index	EBV Breed
Prewrite Growth	Birth Weight	1.43	97	1.13
	Wean Weight	13.3	97	14.7
	Birth Mat.	0.14	94	-0.08
	Milk (Wn.Mat.)	-0.5	96	0.6
Postwean Growth	Postwean Wt	20.5	96	23.5
	Mature Weight	20	101	19
	ADG	95	100	95
	FCR			
Fertility	Scrotal Circumf.	5.8	92	10.2
	Heifer Fertility	-4.4	101	-3.8
	Cow Fertility	-4.8	96	-5.7
	Longevity	32.7	99	33.3
Frame	Height	13	102	12
	Length	24	100	25
Carcass	Dressing%			
	RedMeatYield			
	Marbling			

Selection Value	Ave. Herd
Calving Ease	97
Calf Growth	97
Milk	96
Maintenance	101
Fertility	98
Cow Value	92
Growth Value	101
Production Value	92

- 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:

Heifers born in
130
120
110
100
90
80
70

Heifer calves

Total:

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	100	100	99	99	100	100	100	100	100	99	99	99	99	99	100	100	100	99	99
2018	1	★★★★☆	103	95	121	101	93	100	97	97	104	95	99	121	90	96	101	105	100	92	95	101	98	99	
2019	5	★★★★☆	99	97	92	96	97	89	99	88	102	97	89	92	95	106	100	103	91	103	94	97	100	99	
2020	1	★★★★	92	87	108	140	100	92	88	88	96	87	91	108	90	66	92	103	87	111	89	100	91	84	
Cows in Herd Average:			98	93	107	112	97	94	95	91	101	93	93	107	92	89	98	104	93	102	93	99	96	94	

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		Dir EBV	Calv. Ease	Weaning Weight		Calf Growth	Milk (Wn.Mat.)		Postwean Weight		Mature Weight		Maine- nance	Heifer Fert.		Cow Fert.		Longevity			Ferti- lity
	Number	EBV			Number	EBV		Number	EBV	Milk	Number	EBV	Number		EBV	Number	EBV	Number	EBV	Number		

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.)		Postwean Weight		Mature Weight		Maine-nance	Heifer Fert.		Cow Fert.		Longevity			Ferti-lity	
	Number	Dir EBV			Number	EBV		Number	EBV	Number	EBV	Number	EBV		Number	EBV	Number	EBV	Number	EBV			Number
2016	2689	1.08	-0.07	101	1903	13.7	98	1903	-0.24	97	513	20.1	171	13	105	1216	-3.2	899	-4.6	5845	24.4	94	93
2017	2776	1.12	-0.09	100	2154	14.4	99	2154	-0.24	97	642	20.5	214	14	106	1173	-4.0	866	-4.8	5747	25.8	96	93
2018	2956	1.03	-0.08	101	2127	15.3	101	2127	-0.59	96	545	22.8	259	13	105	1233	-3.8	825	-5.4	5940	26.4	97	98
2019	3205	1.13	-0.08	100	2828	14.6	100	2828	-0.07	98	800	23.9	299	15	102	1183	-3.8	838	-5.7	5930	27.6	98	97
2020	3447	1.13	-0.10	100	3076	15.0	101	3076	-0.03	98	695	24.3	286	17	102	1175	-3.4	680	-5.7	5953	28.1	99	98
2021	3337	1.20	-0.16	100	3401	15.6	102	3401	0.32	99	732	23.3	268	17	101	1046	-4.0	578	-6.0	5335	29.9	101	100
2022	3474	1.16	-0.14	100	3743	15.4	101	3743	-0.02	98	748	23.8	219	18	101	787	-3.6	195	-6.3	1873	29.6	101	100
2023	3301	1.22	-0.16	100	3199	16.6	103	3199	-0.25	97	700	24.6	35	23	101	291	-2.1	3	-9.2			103	101
2024	3305	1.16	-0.16	101	3297	16.2	103	3297	0.50	100	660	25.3			101	4	-4.8					113	103
2025	2867	1.10	-0.12	101	1783	15.9	102	1783	0.91	101	297	16.3			107								103
2026	820	1.06	-0.09	101	9	11.0	93	9	1.61	103													93

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	73	-23	102	285	93	99	299	9.3	99	288	11	98	285	24	100	202	0.45	97	-0.06	98	0.60	101	99	97	94	
2018	47	-22	102	220	85	98	275	9.1	98	248	11	98	220	22	97	123	0.83	101	0.07	99	0.77	104	103	95	101	
2019	55	-26	105	256	101	101	338	10.2	100	253	13	101	183	27	103	206	0.96	103	-0.42	95	0.49	100	102	99	96	
2020	30	-25	104	229	95	100	292	10.6	101	170	14	103	138	32	107	206	0.64	99	0.25	100	0.85	105	103	98	100	
2021	35	-19	99	271	101	101	299	14.7	108	278	12	100	271	27	102	196	1.02	103	0.29	101	0.84	105	105	99	99	
2022	22	-21	101	198	105	102	198	14.6	108	198	13	102	198	28	103	83	1.37	108	0.35	101	0.98	106	108	100	99	
2023	28	-35	113	154	110	103	154	12.6	105	154	12	100	154	27	102	99	1.38	108	0.63	103	1.13	108	112	102	99	
2024	28	-28	107	96	147	112	95	14.8	109	135	15	105	135	36	111	104	1.50	109	0.64	103	0.98	106	114	111	108	
2025				7	81	97	7	16.0	110	19	10	97	19	20	96	2	1.76	113	1.52	110	2.99	133		95	107	
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 Value	Grwth Value	Value	Value	Value	Value	Value	Value	Dir	Dir	Mat.	Mat.	wt	weight					Fertility	Fertility	ty					Dgt/Calvs.	
DJW 150056		KT 110010 DJW 120072	91	100	77	96	108	88	90	85	88	100	120	77	96	105	84	83	79	110	108	95	101	101	111	98	94	64	58
			93	94	84	80	84	84	82	84	2.17	14.5	-0.85	-6.1	20.7	24	27	-1	-1.5	-11.8	-7.3	30.3	13	25	1.62	-0.03	0.05	2	
											95	94	83	84	88	80	82	81	87	81	80	90	89	82	87	86	86		
JHM 160036		PZ 090020 JHM 120058	91	98	93	97	102	91			95	98	93	93	93	102	91	89	92	81	120	109	100	95	92	96	99	19	23
			83	83	65	15	64	67			1.59	13.8	0.19	-1.4	18.1	22	60	-7	5.9	11.3	-9.8	39.6	12	19	0.02	-0.39	0.43		
										86	83	71	65	26	15	21	12	24	72	40	80	24	23	18	16	16	7	8	
LL 130167		LL 100207 LL 110089	95	75	108	146	101	81	74	76	100	75	88	108	80	60	85	90	92	113	93	91	72	72	41	85	115	77	54
			85	92	70	47	57	73	55	69	1.17	1.1	0.36	3.2	8.0	-19	32	-9	5.6	-14.2	-4.3	27.4	-5	-6	-4.18	-1.79	1.67	3	
											94	92	49	70	86	47	50	53	69	59	27	84	81	56	75	70	69	7	15
SS 100055		SD 050148 PV 070013	93	118	99	102	87	108	111	108	95	118	96	99	112	97	106	93	114	100	89	78	117	115	118	100	107	97	82
			92	94	80	53	70	79	56	74	1.54	24.2	0.08	0.4	32.2	16	119	-12	18.1	-3.7	-3.4	18.8	22	41	2.19	0.15	0.99	2	
											96	94	76	80	86	53	53	52	70	78	41	91	72	59	69	64	56	15	33
SS 120008		SS 080008 DJW 060054	88	127	95	66	80	105	131	109	69	127	114	95	129	144	138	135	118	82	81	99	136	138	133	89	102	69	63
			93	94	85	80	84	84	82	84	3.85	29.1	-0.61	-0.8	45.5	61	255	-60	19.7	10.2	-1.8	32.8	34	65	3.51	-1.20	0.62	2	
											95	94	84	85	90	80	81	81	88	83	78	91	90	82	89	88	85	6	11

Breeding Values and Accuracies: Bulls

Green: >120 High
White: 80-120 Average
Orange: <80 Low

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			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
M 190022	1	DJW 150056	86	119	90	84	103	108	123	109	104	60	109	119	119	90	102	123	121	112	110	103	101	103	145	132	128	85	73																							
291232494		M 160015	66	70	46	30	37	53	31	49	66	4.60	-0.41	38	25.1	-2.3	59	40.8	185	-34	15.3	-5.9	-5.9	35.0	39	59	3.07	-1.79	-1.60																							
KENAZ M1922													73	40	30	70	46	49	64	29	29	72	37	21	54	75	32	69	63	61																						
CBR 210013	1	JHM 160036	97	92	89	104	97	84			78	97	103	95	92	89	85	88	84	83	78	90	106	100	84	85	84	95	91																							
291349900		TC 150028	53	67	44	11	40	48			15	1.39	-0.21	15	10.2	-2.6	16	14.6	30	-1	-2.1	4.3	-7.0	33.6	2	9	-0.62	-0.52	-0.21																							
21 0013													56	43	11	67	44	41	18	19	14	21	42	24	53	21	20	16	14	14																						

Breeding Values and Accuracies: Cows

Green: >120 High
White: 80-120 Average
Orange: <80 Low

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	ID Number Name	% 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
M 180052 291180651 JESSE M1852	1	LL 130167 M 140036	103 69	95 71	121 60	101 46	93 42	100 58	97 36	97 54	89 42	104 0.83 74	99 -0.02 51	96 16 46	95 12.0 71	121 6.9 60	113 86 59	90 15.8 67	101 101 33	100 -20 34	100 10.1 42	92 2.9 44	95 -4.7 24	101 34.0 58	98 11 48	99 24 36	80 -0.94 43	91 -0.99 40	133 3.04 39	
M 190005 291197812 JEREBAI M1905	1	SS 100055 M 130021	95 69	120 71	91 57	76 40	90 47	106 58	116 32	106 53	110 40	97 1.36 73	96 0.07 53	130 47 40	120 25.6 71	91 -2.1 57	100 54 56	111 31.6 67	111 141 31	101 -21 30	107 14.1 40	95 0.5 51	92 -4.1 30	91 27.3 60	120 24 44	120 46 34	119 2.28 41	92 -0.81 38	123 2.28 34	
M 190014 291232411 KADISHA M1914	1	LL 130167 M 140024	127 67	81 71	88 52	111 34	96 41	85 56	82 32	81 51	70 62	126 -1.14 73	91 0.27 43	89 8 34	81 4.6 71	88 -3.1 52	75 -7 52	76 5.5 66	86 36 30	90 -9 31	84 1.4 40	107 -9.2 43	89 -3.3 24	94 29.1 56	74 -4 74	81 5 33	57 -2.82 65	70 -3.73 59	110 1.26 57	
M 190025 291232528 KARIS M1925	1	DJW 150056 M 110016	98 67	89 71	81 50	104 30	97 40	78 55	84 30	75 50	84 62	101 1.06 73	91 0.25 45	96 15 30	89 8.9 71	81 -5.1 50	75 -7 50	89 15.2 65	80 12 29	80 3 28	73 -4.7 43	99 -2.7 39	96 -4.8 26	100 33.6 56	87 4 74	89 13 32	109 1.51 66	76 -2.89 59	122 2.21 58	
M 190028 291232551 KAYLEEN M1928	1	LL 130167 M 130018	86 67	85 70	119 53	113 40	113 41	92 56	103 32	92 51	83 62	93 1.76 73	84 0.53 44	84 4 40	85 6.6 70	119 6.2 53	107 70 54	91 16.6 66	109 132 31	106 -27 28	96 7.8 40	120 -19.6 43	106 -6.9 24	98 31.8 56	109 18 74	97 22 35	60 -2.61 66	93 -0.69 59	129 2.71 58	
M 190038 291232650 KIRSTIE M1938	1	SS 120008 M 140032	89 69	108 71	80 54	76 40	90 45	86 57	111 35	88 53	111 64	95 1.53 73	84 0.54 51	132 49 40	108 18.9 71	80 -5.2 54	82 10 55	107 28.7 68	114 155 34	117 -40 33	94 7.0 46	92 2.2 47	87 -2.9 29	104 36.3 58	108 17 75	110 35 35	101 0.82 67	96 -0.36 61	134 3.07 59	
M 200055 291306140 LAREINA M2055	1	LL 130167 M 160043	92 66	87 70	108 50	140 36	100 40	92 55	88 32	88 50	70 43	96 1.45 73	91 0.27 40	66 -13 36	87 7.8 70	108 3.0 50	108 72 52	90 16.1 59	92 63 30	92 -11 30	87 3.2 43	111 -12.1 43	89 -3.5 23	100 33.4 54	91 6 48	84 8 33	66 -2.09 45	91 -0.97 41	96 0.17 40	

Selection List on Cow Value

Bulls 2 years and older

ID Sorted on ID		Name		Sire ID	Dam ID	% Inbreeding	Horned / Polled	Myostatin				Calving Ease Value Acc	Calf Growth Value Acc	Milk Value Acc	Maint. Value Acc	Fertility Value Acc	Cow Value Acc	Growth Value Acc	Prod Value Acc	
								nt821	Q204X	F94L	Genomic tested									
												★★★★★								
1	M	190022	KENAZ M1922	DJW 150056	M 160015	0.8						8666	11970	9046	8430	10337	10853	12331	10949	
												★★★★★								
1	CBR	210013	21 0013	JHM 160036	TC 150028	1.3						9753	9267	8944	10411	9740	8448			

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								
												★★★★★															
1	M	180052	JESSE M1852	LL 130167	M 140036	0.8						103	69	95	71	121	60	101	46	93	42	100	58	97	36	97	54
2	M	190005	JEREBAI M1905	SS 100055	M 130021	0.9						95	69	120	71	91	57	76	40	90	47	106	58	116	32	106	53
												★★★★															
1	M	190028	KAYLEEN M1928	LL 130167	M 130018	0.9						86	67	85	70	119	53	113	40	113	41	92	56	103	32	92	51
2	M	200055	LAREINA M2055	LL 130167	M 160043	0.7						92	66	87	70	108	50	140	36	100	40	92	55	88	32	88	50
												★★★★★															
1	M	190014	KADISHA M1914	LL 130167	M 140024	0.6						127	67	81	71	88	52	111	34	96	41	85	56	82	32	81	51
2	M	190038	KIRSTIE M1938	SS 120008	M 140032	0.9						89	69	108	71	80	54	76	40	90	45	86	57	111	35	88	53
												★★★															
1	M	190025	KARIS M1925	DJW 150056	M 110016	1.4						98	67	89	71	81	50	104	30	97	40	78	55	84	30	75	50

	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 18mth 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.

