

SANTA GERTRUDIS

GENOMIC BREEDING VALUE REPORT

August 2026



WESTON AGRIC COLLEGE

Herd Number: 690428

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EBVs, EBVi's and GEBVs

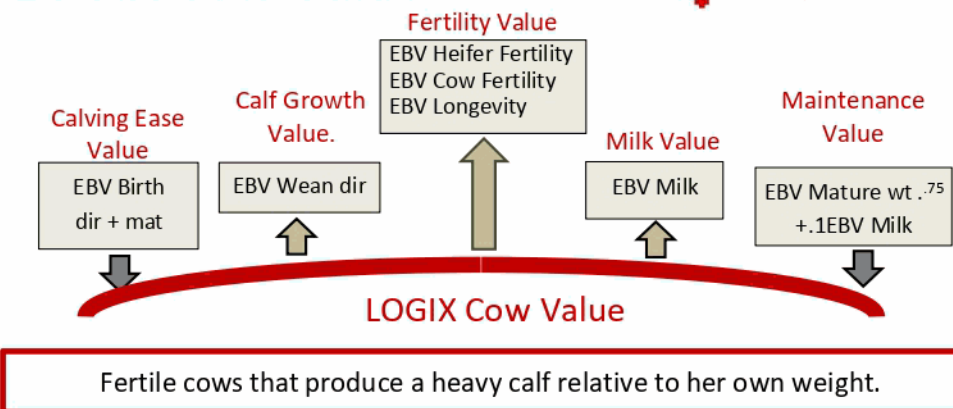
EBVi (Breeding Value Index): Genetic potential relative to the average (100) of the live (active) animals in the breed. Roughly 50% of the animals have values between 90 and 110. Values above 100, depending on the trait, tend to be in the more favourable direction.

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)

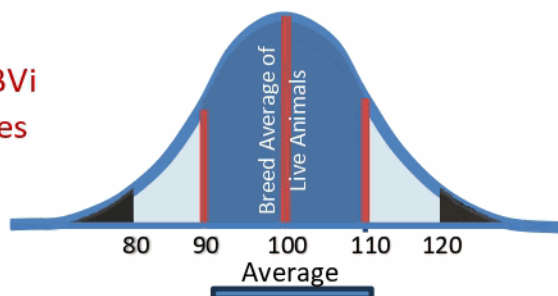
- WeanerCalf / Growth Value > 120
 - Cow Value and Fertility Value average to high
- Growers are usually heavier at birth (lower Calving Ease Value), and maturity (lower Maintenance Value).

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

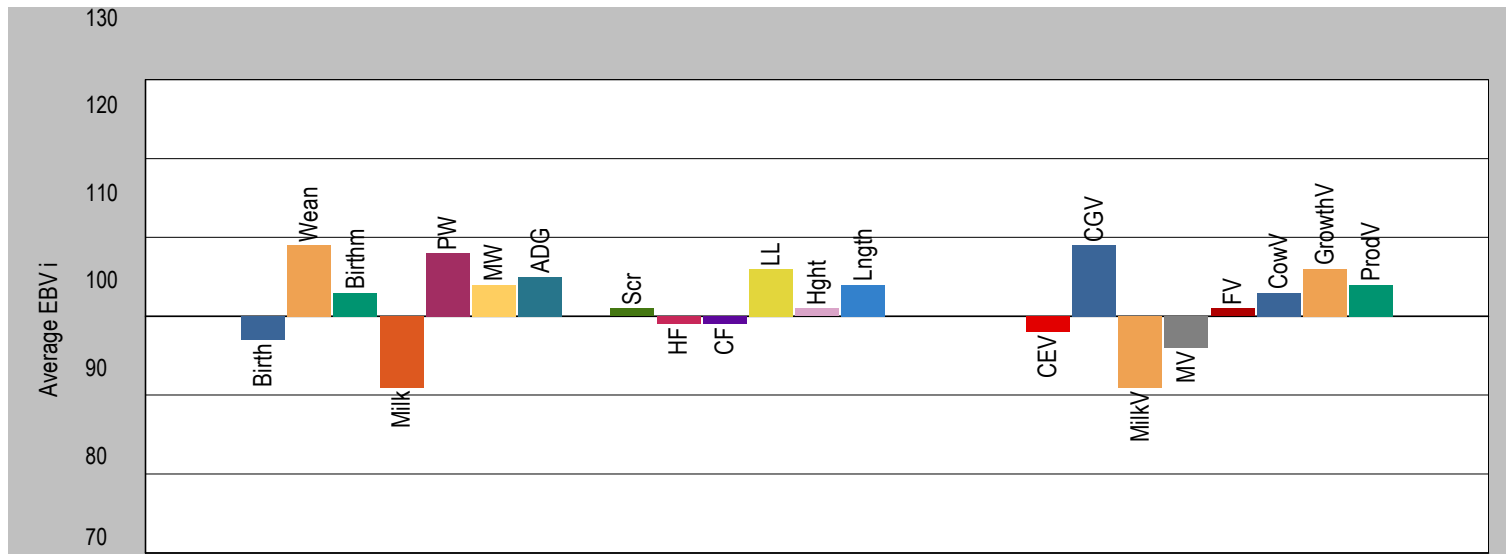
Larger groups result in more accurate and stable breeding values, as the mean and distribution of the group can be more accurately determined and are thus more representative. Groups should preferably have more than 5 animals. Weigh all the animals in the same group on the same day, as corrections for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



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	1.45	97	1.14
	Wean Weight	19.6	109	14.9
	Birth Mat.	-0.20	103	-0.08
	Milk (Wn.Mat.)	-2.0	91	0.7
Postwean Growth	Postwean Wt	29.6	108	23.7
	Mature Weight	23	104	20
	ADG	119	105	97
	FCR			
Fertility	Scrotal Circumf.	11.1	101	10.4
	Heifer Fertility	-2.5	99	-3.8
	Cow Fertility	-5.6	99	-5.7
	Longevity	37.4	106	33.2
Frame	Height	13	101	12
	Length	28	104	25
Carcass	Dressing%			
	RedMeatYield			
	Marbling			

Selection Value	Ave. Herd
Calving Ease	98
Calf Growth	109
Milk	91
Maintenance	96
Fertility	101
Cow Value	103
Growth Value	106
Production Value	104

- 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
2021	1	★★★☆☆	125	92	70	107	100	89			118	92	115	70	88	93	92	98	80	102	93	109	81	86	
2022	1	★★★★★	119	105	93	96	109	113	103	110	118	105	97	93	112	103	105	109	117	114	99	104	79	98	
2023	8	★★★★☆	92	111	94	95	100	103	106	103	91	111	103	94	110	106	107	107	102	96	100	106	106	106	
Cows in Herd Average:			112	103	86	99	103	102	105	107	109	103	105	86	103	101	101	105	100	104	97	106	89	97	

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		Mainte- 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	1.09	-0.07	101	1903	13.7	98	1903	-0.21	97	513	20.2	171	13	106	1216	-3.2	899	-4.6	5864	24.3	94	93
2017	2776	1.12	-0.09	100	2154	14.4	99	2154	-0.22	97	642	20.6	214	14	106	1173	-4.0	866	-4.8	5758	25.8	96	93
2018	2956	1.04	-0.08	101	2127	15.3	101	2127	-0.59	96	545	22.8	259	13	105	1233	-3.7	826	-5.5	5998	26.3	97	98
2019	3205	1.14	-0.08	100	2831	14.6	100	2831	-0.09	97	800	23.9	299	15	102	1183	-3.7	838	-5.7	5966	27.6	98	97
2020	3447	1.14	-0.10	100	3076	15.0	100	3076	-0.03	98	695	24.2	286	17	102	1175	-3.4	684	-5.7	6012	28.1	99	97
2021	3337	1.21	-0.16	100	3401	15.6	101	3401	0.30	99	732	23.2	273	17	101	1059	-4.0	604	-5.9	5444	29.9	101	100
2022	3474	1.16	-0.14	100	3746	15.4	101	3746	-0.04	98	748	23.7	224	18	101	821	-3.8	225	-6.3	2258	29.6	101	100
2023	3301	1.23	-0.17	100	3204	16.6	103	3204	-0.21	97	702	24.8	45	23	102	325	-2.5	4	-8.3			103	101
2024	3305	1.17	-0.16	101	3327	16.2	103	3327	0.49	99	661	25.3			101	5	-5.7					112	103
2025	2989	1.12	-0.13	101	1875	16.2	102	1875	0.85	101	406	17.1			106								103
2026	949	1.09	-0.13	101	41	12.6	96	41	1.80	104													96

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	98	288	11	98	285	24	99	202	0.46	97	-0.05	98	0.58	102	98	97	94	
2018	47	-22	102	220	86	98	275	9.1	98	248	11	98	220	22	97	123	0.84	101	0.08	99	0.72	104	103	95	101	
2019	55	-26	105	256	102	101	338	10.2	100	253	13	101	183	27	102	206	0.98	103	-0.41	95	0.48	101	102	99	96	
2020	30	-25	104	229	95	100	292	10.5	100	170	14	103	138	32	107	206	0.65	99	0.27	101	0.83	105	103	98	100	
2021	35	-19	99	271	100	101	299	14.7	108	278	12	100	271	27	102	196	0.99	103	0.32	101	0.82	105	104	99	98	
2022	22	-22	101	198	104	102	198	14.6	108	198	13	102	198	28	103	83	1.36	107	0.35	101	0.93	106	108	100	99	
2023	28	-35	112	154	111	103	154	12.6	104	154	12	100	154	27	102	99	1.39	108	0.62	103	1.10	109	111	102	99	
2024	28	-28	107	96	148	112	95	14.8	108	135	15	105	135	37	111	104	1.50	109	0.64	103	0.93	106	114	111	107	
2025				94	71	94	94	12.4	104	136	13	101	136	25	100	32	1.81	113	1.20	108	1.46	113		91	95	
2026																										

Sires

Bull				Selection Values							Calf		Dam		Growth				Fertility				Frame		Carcass			Measured Progeny		
ID	Index EBV Acc	Sire ID	Dam ID	Calv. Ease Value	Calf Grwth Value	Milk Value	Maint. Value	Fertility Value	Cow Value	Growth Value	Prod Value	Birth Dir	Wean Dir	Birth Mat.	Wean Mat.	Post wn wt	Mature weight	ADG	FCR	Scrotal	Heifer Fertility	Cow Fertility	Long-evi ty	Height	Length	EMA	Fat	Marbling	Birth Grwth Test	Wean Dgt/Calvs.
DJW 170029		DJW 130029		117	105	110	94	94	112	103	109	117	105	97	110	113	104	106	87	129	95	92	103	65	102	117	111	116	122	87
170029DJW				96	96	92	91	92	88	94	89	-0.29	17.7	0.04	3.8	33.5	24	124	-5	26.4	0.2	-4.1	35.3	-9	27	2.14	1.65	1.72	21	9
170029DJW												97	96	92	92	93	91	93	93	95	91	90	94	96	95	95	94	94		11
HDH 180132		ML 140045		95	113	76	87	92	94	114	95	91	113	116	76	106	117	113	110	101	88	97	102	108	111	105	101	106	11	8
HDH18132		HDH 150192		75	76	52	15	48	59	20	51	1.93	21.7	-0.67	-6.6	28.5	35	151	-32	10.9	6.1	-5.0	34.9	17	37	1.16	0.36	0.93		
HDH18132												81	76	49	52	26	15	24	13	26	51	29	65	24	23	12	11	11	2	2
HH 170045		LL 120206		88	117	84	75	86	95	108	95	83	117	113	84	111	132	108	100	107	81	105	85	113	119	108	95	102	11	150
OUTPOST		HH 130031		92	97	93	91	92	88	90	88	2.60	24.4	-0.57	-4.1	32.0	50	130	-20	14.3	11.3	-6.6	23.0	20	46	1.41	-0.47	0.60		
OUTPOST												93	97	90	93	90	91	90	89	90	93	90	94	90	90	90	89	89	17	22
KT 170008		BR 140011		89	118	95	79	107	111	109	109	88	118	108	95	112	125	111	108	116	91	108	122	100	111	108	105	100	120	89
ZAC		KT 130040		92	94	76	43	62	76	72	75	2.14	24.9	-0.39	-0.7	33.2	44	144	-30	18.9	3.1	-7.4	48.0	12	36	1.44	0.89	0.45	14	13
ZAC												96	94	74	76	64	43	75	62	82	72	37	78	83	81	71	65	64		21
LL 170313		LL 140108		108	101	116	94	111	113	106	111	102	101	118	116	97	104	103	94	109	112	99	116	113	107	99	96	113		37
LL170313		LL 120081		85	93	87	83	87	83	84	83	0.95	15.4	-0.75	5.4	21.2	23	109	-13	15.1	-13.4	-5.4	43.7	20	32	0.64	-0.35	1.44	4	5
LL170313												85	93	84	87	86	83	83	83	84	86	84	90	84	84	83	83	83		
RD 190059		HHH 130004		100	100	86	107	77	84	100	83	96	100	115	86	95	92	99	96	100	80	83	91	95	99	102	91	96	3	19
RD190059		SP 140063		84	89	79	75	79	78	76	78	1.48	14.8	-0.66	-3.5	20.0	12	93	-16	10.1	11.9	-2.1	26.9	9	24	0.88	-0.94	0.12		
RD190059												85	89	78	79	76	75	76	75	76	79	76	83	76	76	75	75	75		
RR 180018		LL 150177		103	101	107	96	97	102	100	100	103	101	102	107	110	102	103	98	79	91	101	106	103	106	115	108	116		21
RR180018		RR 160004		50	83	55	21	45	57	30	52	0.92	15.6	-0.14	2.7	31.4	22	108	-18	-1.3	3.5	-5.9	37.3	14	32	1.96	1.20	1.68		
RR180018												52	83	40	55	41	21	37	20	42	42	23	69	42	41	37	34	33		
SP 160036		SP 110037		84	120	100	85	117	118	118	117	90	120	87	100	125	117	125	131	84	118	117	94	117	110	101	115	104		106
HELSINKI		SP 110081		87	96	90	85	89	85	84	85	1.97	25.8	0.43	0.7	42.9	35	203	-56	1.7	-18.4	-9.2	29.3	22	35	0.86	2.08	0.74	14	26
HELSINKI												87	96	85	90	85	85	85	84	85	90	85	92	85	85	85	84	84		
SS 200173		SS 160031		84	135	94	90	109	129	133	130	73	135	102	94	135	111	138	137	130	95	111	119	119	119	156	75	109	66	36
SS 200173		JO 120020		96	95	92	91	92	88	92	89	3.46	33.9	-0.16	-1.0	50.6	30	258	-64	26.6	0.6	-8.0	46.2	23	46	5.42	-3.08	1.14		
SS 200173												97	95	92	92	93	91	93	92	94	92	91	92	94	93	93	93	92	6	
TS 190029		KVS 160007		85	114	94	89	102	103	117	104	87	114	102	94	115	113	114	107	119	88	109	112	133	122	111	104	107	2	3
TS 190029		TS 150113		83	83	78	75	78	76	77	76	2.30	22.6	-0.16	-1.3	34.9	31	158	-29	20.5	5.5	-7.5	41.3	32	48	1.64	0.66	1.02		
TRISTAR ADAM												84	83	78	78	76	75	77	77	77	77	76	80	77	77	76	76	76		

Growth Tests

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

Animal				Weight		Frame				Growth				Carcass			
Test Code	Sex	Test no	Sire ID	Cow	Wean	Length	Height	Length/	Scrotum	Intake	ADG	FCR	Growth	EMA	Fat	Marbling	Carcass
Test station		ID	Dam ID	Value	dir			Height					Value				Value
202202 B22 F			8470272SGT														
KAIROS VELD SANTA'S		FF 220044 291414423	DJW 170029 FF 190046	113	105	98	79	127	117	95	105	99	103	82	126	93	92
					26	22	-1	1.20	19.7	0.66	117	-19		-0.77	3.48	-0.12	
				54	49	50	59	54	50	43	46	43	46	71	66	65	68

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	ID	Number	% 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

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																														
H 210185 291366615 H21185	13	HDH 180132 HDH 190135	125 64	92 66	70 42	107 17	100 36	89 50			87 7	118 -0.39	115 -0.64	93 13	92 10.2	70 66	69 -8.3	69 -22	88 14.6	92 63	95 -15	80 -0.7	102 -5.1	93 -4.2	109 39.0	81 1	86 9	85 -0.52	100 0.18	100 0.46
FF 220044 291414423 DONNELLY	1	DJW 170029 FF 190046	119 66	105 69	93 50	96 33	109 41	113 54	103 46	110 52	92 68	118 -0.44	97 0.05	103 23	105 17.8	93 -1.4	98 49	112 32.5	105 117	99 -19	117 19.7	114 -15.2	99 -5.5	104 35.8	79 -1	98 22	82 -0.77	126 3.48	93 -0.12	
FR 230119 96369525 GENA	1	SP 160036 FR 140015	82 37	117 71	96 57	91 24	121 47	115 51	118 28	115 46	119 27	88 2.21	88 0.37	110 29	117 24.4	96 -0.6	108 74	121 39.9	123 194	125 -50	103 12.2	121 -20.7	122 -10.3	96 30.2	115 21	110 35	106 1.27	113 1.87	106 0.88	
KVS 230077 96766928 KVS230077		KT 170008 KVS 140201	95 49	109 50	97 45	89 22	101 41	104 42	100 37	101 41	105 34	95 1.58	105 -0.25	112 31	109 20.0	97 -0.3	101 57	105 27.7	103 111	98 -18	109 15.2	100 -3.6	92 -4.0	115 43.4	100 12	104 29	104 1.11	101 0.36	89 -0.44	
LL 230161 95892998 LL230161	1	RR 180018 LL 160117	87 34	114 67	103 46	89 16	82 37	99 45	106 20	98 40	109 23	88 2.17	101 -0.13	112 31	114 22.3	103 1.5	110 78	116 35.6	110 138	102 -23	92 5.8	75 16.3	86 -2.9	109 39.4	113 20	116 42	117 2.13	103 0.60	112 1.35	
LL 230226 96382429 LL230226	2	LL 170313 LL 120269	100 24	100 71	108 53	95 11	92 39	97 45			97 10	97 1.42	111 -0.48	104 23	100 15.1	108 3.0	105 66	97 21.2	97 85	92 -11	107 14.3	90 4.6	85 -2.6	115 43.5	106 16	103 28	97 0.50	96 -0.27	108 1.06	
SP 230146 96163175 SP 230146	3	HH 170045 HH 190032	88 43	115 71	89 53	83 37	109 44	105 52	107 24	104 46	108 23	88 2.20	106 -0.30	121 39	115 23.0	89 -2.7	97 47	109 30.6	107 127	108 -30	105 13.0	105 -7.8	119 -9.6	90 26.5	102 13	109 34	100 0.77	96 -0.33	109 1.13	
SP 230148 96163191 SP 230148		RD 190059 SP 200073	103 40	97 69	80 43	115 27	86 37	85 47	92 20	83 42	86 18	102 1.01	104 -0.25	85 6	97 13.3	80 -5.4	85 17	97 21.7	94 73	96 -16	80 -0.5	85 8.0	89 -3.4	100 33.2	92 7	90 14	92 0.05	95 -0.44	95 0.08	
SS 230108 95487856 SS230108	2	SS 200173 SS 200144	86 65	130 66	79 43	100 25	103 36	118 51	116 44	117 50	116 44	78 3.08	107 -0.35	100 19	130 31.4	79 -5.5	111 81	128 44.8	118 172	115 -38	113 17.5	96 -0.4	101 -6.0	114 42.4	106 16	112 38	130 3.25	96 -0.37	114 1.56	
YJF 230332 96239157 YJF 230332	2	TS 190029 JF 190004	93 61	106 62	97 43	98 13	106 30	103 47	104 20	101 42	101 17	94 1.66	100 -0.08	101 20	106 18.1	97 -0.4	102 59	105 27.7	103 108	98 -18	108 14.6	97 -1.2	108 -7.3	110 40.2	117 22	107 33	100 0.71	102 0.40	105 0.86	

Selection List on Cow Value

Cows 2 years and older

ID Sorted on ID	Name	Sire ID	Dam ID	% Inbreeding	Horned / Polled	Myostatin nt821 Q204X F94L Genomic tested	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	
1	FF 220044	DONNELLY	DJW 170029	FF 190046	1.0		119 66	105 69	93 50	96 33	109 41	113 54	103 46	110 52	
2	FR 230119	GENA	SP 160036	FR 140015	0.6		82 37	117 71	96 57	91 24	121 47	115 51	118 28	115 46	
3	SS 230108	SS230108	SS 200173	SS 200144	2.5		86 65	130 66	79 43	100 25	103 36	118 51	116 44	117 50	
1	KVS 230077	KVS230077	KT 170008	KVS 140201	0.5		95 49	109 50	97 45	89 22	101 41	104 42	100 37	101 41	
2	SP 230146	SP 230146	HH 170045	HH 190032	3.4		88 43	115 71	89 53	83 37	109 44	105 52	107 24	104 46	
3	YJF 230332	YJF 230332	TS 190029	JF 190004	2.1		93 61	106 62	97 43	98 13	106 30	103 47	104 20	101 42	
1	LL 230161	LL230161	RR 180018	LL 160117	0.9		87 34	114 67	103 46	89 16	82 37	99 45	106 20	98 40	
2	LL 230226	LL230226	LL 170313	LL 120269	1.7		100 24	100 71	108 53	95 11	92 39	97 45			
1	H 210185	H21185	HDH 180132	HDH 190135	12.8		125 64	92 66	70 42	107 17	100 36	89 50			
2	SP 230148	SP 230148	RD 190059	SP 200073	0.5		103 40	97 69	80 43	115 27	86 37	85 47	92 20	83 42	

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	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.

