

SANTA GERTRUDIS

GENOMIC BREEDING VALUE REPORT

September 2026



FAIRLAND SANTA STUD

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EBVs, EBVi's and GEBVs

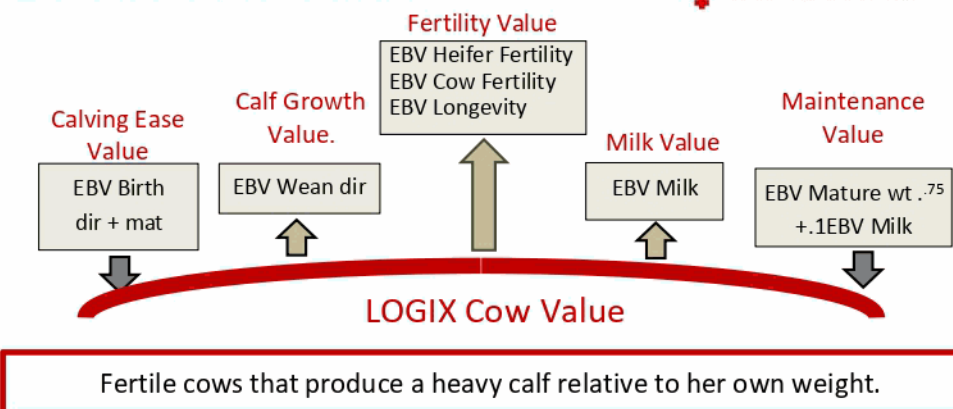
EBVi (Breeding Value Index): Genetic potential relative to the average (100) of the live (active) animals in the breed. Roughly 50% of the animals have values between 90 and 110. Values above 100, depending on the trait, tend to be in the more favourable direction.

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)

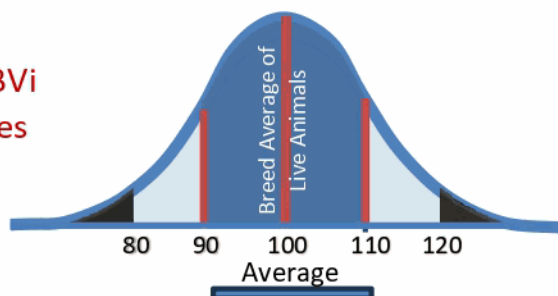
- WeanerCalf / Growth Value > 120
 - Cow Value and Fertility Value average to high
- Growers are usually heavier at birth (lower Calving Ease Value), and maturity (lower Maintenance Value).

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

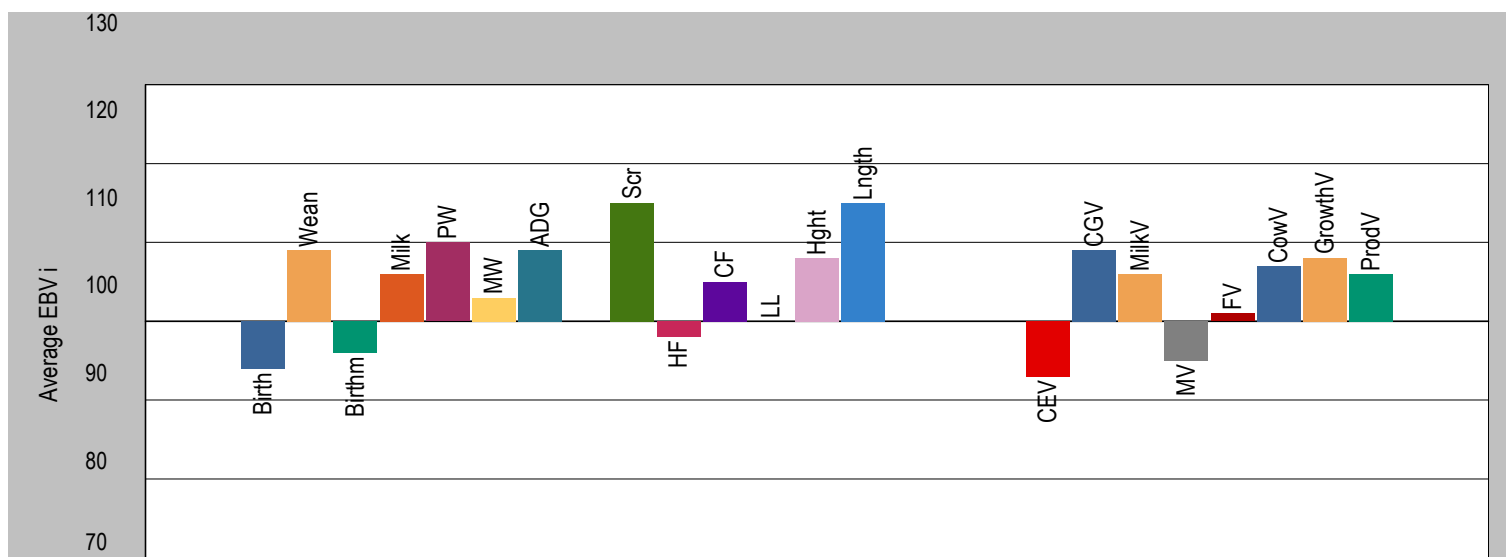
Larger groups result in more accurate and stable breeding values, as the mean and distribution of the group can be more accurately determined and are thus more representative. Groups should preferably have more than 5 animals. Weigh all the animals in the same group on the same day, as corrections for 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	Lnght:	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	1.59	94	1.11
	Wean Weight	19.7	109	14.7
	Birth Mat.	0.10	96	-0.07
	Milk (Wn.Mat.)	2.5	106	0.7
Postwean Growth	Postwean Wt	30.8	110	23.1
	Mature Weight	22	103	19
	ADG	132	109	95
	FCR			
Fertility	Scrotal Circumf.	18.8	115	10.4
	Heifer Fertility	-1.7	98	-3.8
	Cow Fertility	-6.8	105	-5.8
	Longevity	32.7	100	33.0
Frame	Height	17	108	12
	Length	40	115	24
Carcass	Dressing%			
	RedMeatYield			
	Marbling			

Selection Value	Ave. Herd
Calving Ease	93
Calf Growth	109
Milk	106
Maintenance	95
Fertility	101
Cow Value	107
Growth Value	108
Production Value	106

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

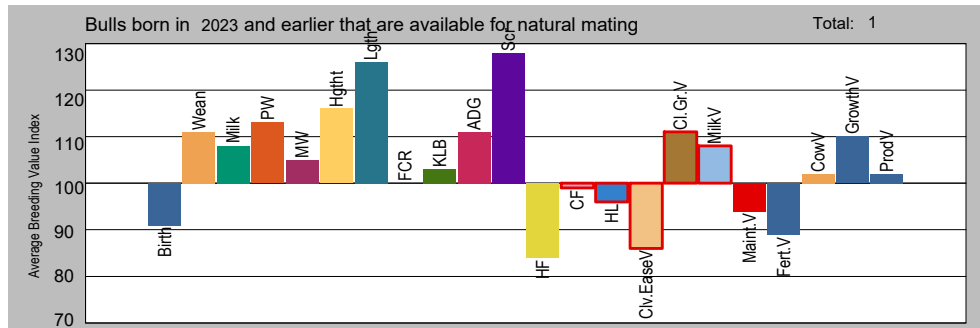
What does a sub-selection value above breed average (100) mean?:

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

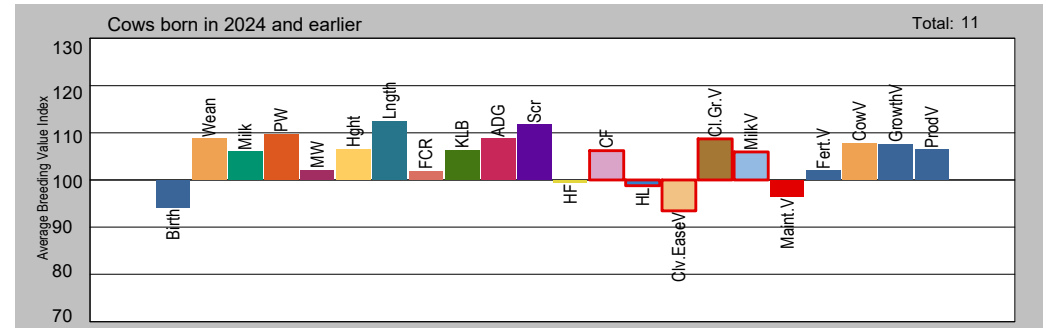
Genetic Windows

Animals available for breeding

Bulls on the farm

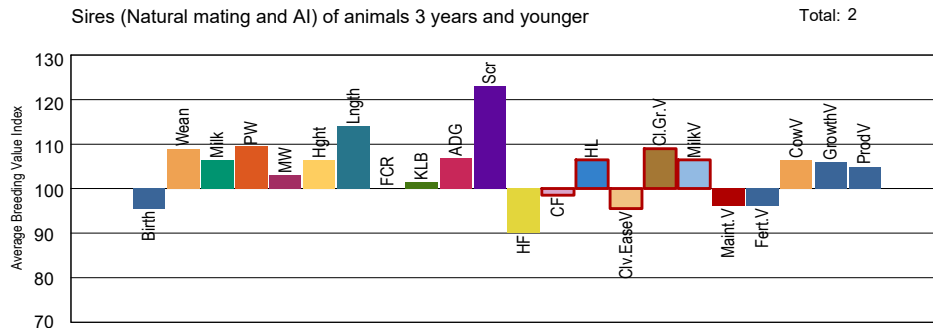


Cow Herd

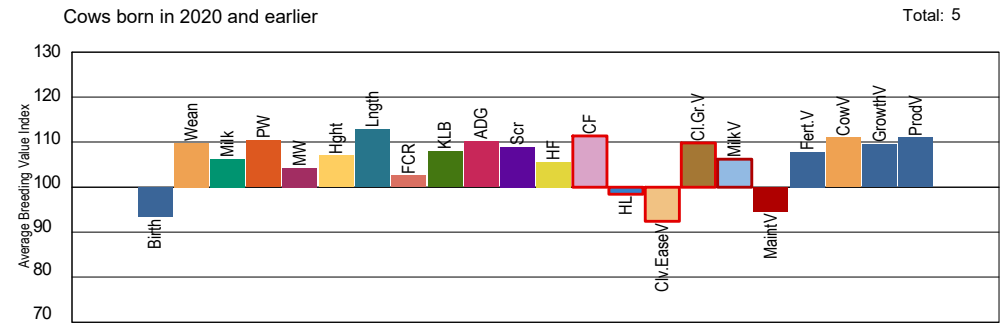


Results of previous selection decisions

Sires of young animals

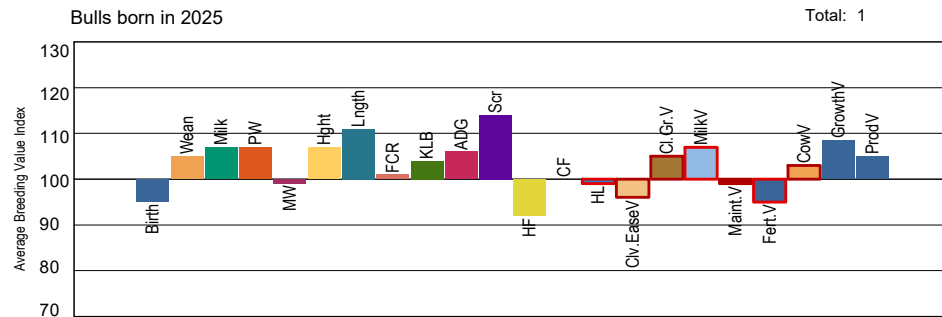


Cows older than 6 years

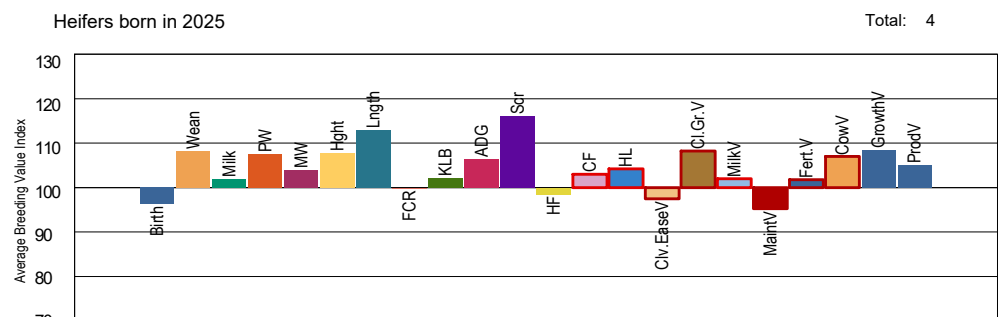


Selection possibilities

Bull calves



Heifer calves

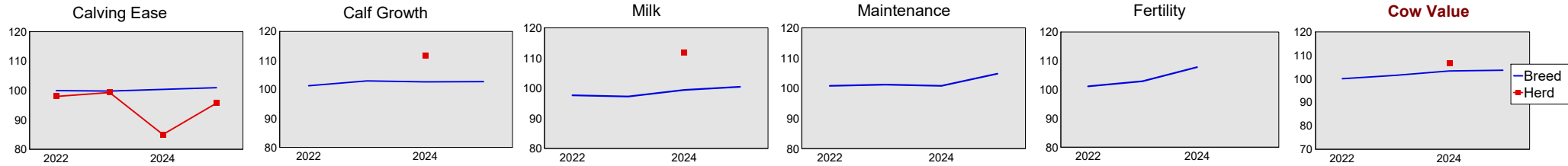


Summary of Cow Herd

			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	99	99	99	100
2017	1	★★★★☆	75	111	111	84	118	109	111	108	89	111	61	111	109	116	114	108	115	114	121	100	127	125
2018	1	★★★★☆	115	102	70	100	120	104			111	102	108	70	99	101	101	100	96	125	112	100	96	100
2019	2	★★★★☆	95	105	115	101	98	107	107	105	96	105	101	115	108	96	110	112	101	93	109	95	106	109
2020	1	★★★★☆	82	127	120	87	105	129	113	126	76	127	96	120	129	112	116	108	132	103	106	102	100	122
2022	2	★★★★☆	104	102	104	103	98	103	102	100	100	102	113	104	103	95	102	104	107	96	97	104	101	101
2024	4	★★★★☆	90	111	107	96	97	107	109	105	93	111	95	107	112	103	110	106	118	94	105	97	109	118
2025	4	★★★★☆	98	108	102	95	102	107	109	105	96	108	97	102	108	104	107	102	116	99	103	104	108	113
2026	2	★★★★☆	97	109	103	96	99	106	108	105	98	109	99	103	110	103	109	104	119	96	106	97	111	118
Cows in Herd Average:			95	109	104	95	105	109	108	108	95	109	96	104	110	104	109	106	113	103	107	100	107	113

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.



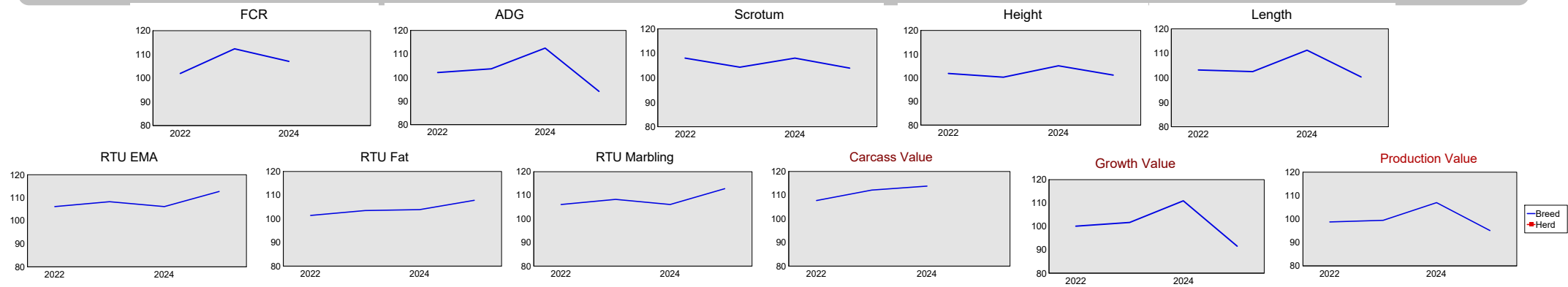
Herd

Birth Year	Calving Ease				Calf Growth			Milk			Maintenance						Fertility						Cow Value
	Birth Weight		Mat	Calv. Ease	Weaning Weight		Calf Growth	Milk (Wn.Mat.)		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	
2022	15	1.28	-0.11	98														7	28.7				
2023	16	1.19	-0.20	99																			
2024	4	1.95	0.37	85	4	21.0	112	4	4.33	112										107			
2025	3	1.52	0.24	96																			

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		Mainte-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	100	1903	13.7	98	1903	-0.18	97	513	20.0	171	13	105	1226	-3.3	906	-4.7	5869	24.3	94	93
2017	2776	1.13	-0.09	100	2154	14.4	99	2154	-0.17	97	642	20.4	214	14	106	1179	-4.1	871	-4.8	5765	25.8	96	93
2018	2956	1.05	-0.07	101	2127	15.3	101	2127	-0.52	96	545	22.6	259	13	105	1243	-3.8	835	-5.5	6004	26.3	97	98
2019	3205	1.15	-0.07	100	2831	14.6	100	2831	-0.05	97	800	23.6	299	15	102	1189	-3.7	844	-5.7	5985	27.5	98	97
2020	3447	1.14	-0.10	100	3076	14.9	100	3076	0.03	98	695	23.9	286	17	102	1192	-3.4	704	-5.7	6060	28.1	99	97
2021	3337	1.21	-0.16	99	3401	15.6	102	3401	0.37	99	732	22.7	273	17	101	1071	-4.0	641	-6.0	5554	29.9	101	100
2022	3474	1.17	-0.14	100	3746	15.4	101	3746	0.01	98	748	23.3	226	18	101	854	-3.8	274	-6.5	2809	29.7	101	100
2023	3301	1.22	-0.18	100	3337	16.3	103	3337	-0.10	97	702	24.6	48	23	101	435	-2.9	15	-7.5			103	102
2024	3311	1.17	-0.16	100	3379	16.1	103	3379	0.56	99	667	25.1			101	21	-6.0					108	103
2025	3015	1.12	-0.13	101	1920	16.2	103	1920	0.86	100	441	17.5			105								104
2026	1509	1.01	-0.07	102	57	13.1	97	57	1.96	104													98

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			
2022																									
2023																									
2024																									
2025																									

Breed

Birth Year	Growth								Frame						Carcass						Selection Values					
	FCR			ADG			Scrotum			Height			Length			RTU		EMA		Fat		Marbling		Cracss Value	Growth Value	Prod Value
	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi	Number	EBV	EBVi	EBV	EBVi	EBV	EBVi				
2017	73	-23	102	285	93	100	299	9.4	98	288	11	99	285	24	100	202	0.47	96	-0.03	98	0.58	102	99	97	94	
2018	47	-23	102	220	86	98	275	9.2	98	248	11	98	220	22	98	123	0.85	101	0.10	99	0.72	104	103	95	101	
2019	55	-26	105	256	102	102	338	10.3	100	253	13	101	183	27	103	206	1.00	103	-0.39	95	0.48	101	102	99	96	
2020	30	-25	104	229	95	100	292	10.6	100	170	14	103	138	32	107	206	0.67	99	0.29	101	0.82	105	103	98	100	
2021	35	-19	99	271	100	101	299	14.8	108	278	12	100	271	27	102	196	1.02	103	0.33	101	0.82	105	105	99	99	
2022	22	-22	102	198	104	102	198	14.7	108	198	13	102	198	28	103	83	1.38	107	0.38	101	0.92	106	108	100	99	
2023	28	-34	112	154	111	104	154	12.8	104	154	12	100	154	27	103	99	1.43	108	0.64	103	1.10	108	112	102	99	
2024	28	-28	107	96	148	112	95	14.8	108	135	15	105	135	37	111	104	1.50	109	0.70	104	0.92	106	114	111	107	
2025				94	70	94	94	12.6	104	136	13	101	136	25	100	32	1.90	114	1.19	108	1.46	113		92	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.
CJ 160009		ER 100015	CJ 080002	97	100	100	102	90	93	99	91	96	100	106	100	100	96	100	97	106	98	85	94	94	97	90	114	105	46	17
CJ1609				85	79	46	22	57	63	21	55	1.48	14.8	-0.30	0.8	23.2	15	96	-16	13.9	-2.4	-2.8	29.2	8	21	-0.07	2.03	0.83		
												92	79	58	46	30	22	24	16	27	62	30	78	26	25	19	17	16		
CJ 210003		CJ 160011	CJ 170008	105	107	105	98	103	111	102	108	100	107	114	105	106	101	103	100	118	96	98	117	97	102	97	121	111	18	3
BILLY				89	82	80	78	81	77	78	77	1.07	18.7	-0.60	2.3	27.9	20	107	-20	20.4	-0.7	-5.4	44.9	10	27	0.56	2.91	1.34		
												91	82	82	80	79	78	79	78	79	81	79	84	79	79	78	78	78		
DJW 130035		DJW 100033	DJW 070083	95	111	110	95	88	106	110	105	98	111	92	110	121	104	112	98	144	76	103	100	115	130	104	121	118	33	29
13035DJW				89	89	77	52	65	75	52	70	1.26	20.8	0.25	3.7	39.2	23	146	-18	34.5	15.5	-6.4	33.3	21	57	1.13	2.94	1.90	5	7 21
												92	89	75	77	66	52	67	31	73	69	43	84	74	72	68	64	63		
DJW 170029		DJW 130029	DJW 100026	117	105	111	94	95	113	103	110	116	105	96	111	113	105	107	88	130	96	94	102	66	102	117	112	116	122	87
170029DJW				96	96	92	91	92	88	94	89	-0.28	17.7	0.08	4.0	33.4	24	125	-6	26.5	-0.6	-4.6	34.0	-8	27	2.18	1.72	1.72	21	9 11
												97	96	92	92	93	91	93	93	95	91	90	94	96	95	95	94	94		
JL 120005		HN 050046	LF 030025	95	126	83	79	120	123	134	125	100	126	88	83	124	126	135	116	113	109	135	95	143	144	136	82	110	68	44
JL1205				92	92	88	47	79	80	42	72	1.13	28.9	0.41	-4.5	42.0	44	244	-39	17.6	-11.3	-12.9	29.5	38	72	3.74	-2.11	1.20		
												94	92	83	88	68	47	48	33	66	85	58	93	52	50	39	36	35	28 78	
ML 130066		JL 090174	JL 080369	95	107	97	93	122	111	110	110	94	107	107	97	105	107	109	107	105	126	118	95	113	112	104	102	110	131	28
ML130066				94	92	87	76	87	84	76	82	1.62	18.6	-0.35	-0.3	26.8	26	132	-28	13.2	-24.6	-9.4	29.9	20	38	1.06	0.51	1.23		
												97	92	84	87	80	76	77	76	77	89	80	93	77	77	76	76	76	19 33	
SJ 180003		DJW 130035	SZ 100046	86	111	108	94	89	102	110	102	91	111	87	108	113	105	111	100	128	84	99	96	116	126	111	129	113	15	6
FRED				77	70	54	31	45	58	36	54	1.85	21.0	0.42	3.3	33.0	24	143	-20	25.6	9.2	-5.6	30.2	22	53	1.65	3.97	1.47		
												82	70	55	54	40	31	42	26	45	44	26	64	46	44	41	39	38		
SP 150013		JO 080028	SP 110081	80	123	95	97	99	111	123	112	72	123	90	95	120	102	126	123	85	93	108	97	110	116	128	97	106	33	23
GAZEBO				92	92	90	83	88	84	86	84	3.55	27.3	0.32	-0.9	38.5	21	208	-47	2.5	2.0	-7.5	30.6	18	42	3.03	-0.22	0.93	5	12 21
												93	92	87	90	86	83	87	84	88	89	85	91	88	88	87	86	86		

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																													
SJ 180003 291174027 FRED		DJW 130035 SZ 100046	86 77	111 70	108 54	94 31	89 45	102 58	110 36	102 54	116 40	91 1.85 82	87 0.42 55	105 24 31	111 21.0 70	108 3.3 54	115 91 52	113 33.0 40	111 143 42	100 -20 26	128 25.6 45	84 9.2 44	99 -5.6 26	96 30.2 64	116 22 46	126 53 44	111 1.65 41	129 3.97 39	113 1.47 38
SJ 240003 97756860 FINN		SJ 180003 HDH 170132	81 65	110 64	110 45	89 20	104 32	104 49	110 20	104 43	115 22	91 1.89 70	74 0.95 45	110 29 20	110 20.0 64	110 3.8 45	113 85 43	110 30.7 26	112 148 24	97 -17 15	121 21.7 28	100 -3.5 33	110 -7.8 20	98 31.7 44	121 25 26	125 51 25	117 2.15 23	115 2.11 21	113 1.46 21
SJ 250004 99559015 DIED	3	SJ 180003 SJ 220011	96 51	105 45	107 36	99 18	95 32	103 38	105 22	101 35	105 24	95 1.50 55	103 -0.18 37	99 19 18	105 17.5 45	107 2.9 36	110 80 33	107 28.2 27	106 121 26	101 -21 16	114 18.0 28	92 2.2 32	100 -5.8 20	99 32.5 43	107 17 28	111 36 27	100 0.77 24	118 2.54 23	109 1.12 22
SJ 260003 6020356488 MAYWEATHER	3	SJ 180003 DJW 200007	81 53	119 50	114 40	90 23	97 30	114 41	111 29	112 39	118 32	84 2.52 56	92 0.25 40	108 27 23	119 25.3 50	114 5.1 40	126 117 38	121 39.3 31	114 153 32	101 -21 24	130 26.8 35	93 1.6 30	103 -6.3 18	99 32.3 43	108 17 35	124 50 34	120 2.45 33	115 2.17 31	114 1.54 31

Breeding Values and Accuracies: Cows

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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																														
HDH 170132		JL 120005		75	111	111	84	118	109	111	108	115	89	61	116	111	111	112	109	114	95	115	114	121	100	127	125	124	100	113
291203529		HDH 150074		69	61	70	24	47	55	21	48	18	2.02	1.45	35	20.5	4.0	83	30.0	156	-14	18.3	-14.8	-10.2	33.2	28	51	2.72	0.26	1.48
HDH170132													69	70	24	61	70	52	34	24	16	33	48	30	62	26	25	19	18	18
JL 180002	1	ML 130066		115	102	70	100	120	104			100	111	108	101	102	70	77	99	101	102	96	125	112	100	96	100	99	103	109
291168938		JL 150048		69	53	48	12	53	49			10	0.13	-0.37	21	16.0	-8.3	-2	22.4	98	-23	8.0	-24.1	-8.2	32.8	9	25	0.69	0.56	1.12
JL180002													69	67	12	53	48	38	30	21	9	23	63	33	64	23	22	10	9	9
DJW 190006	8	DJW 130035		101	108	124	95	97	115	110	113	110	98	111	102	108	124	126	114	112	105	124	88	111	97	116	118	102	111	112
291209476		DJW 070025		69	65	68	31	48	57	34	52	40	1.30	-0.48	21	19.0	8.1	117	34.2	145	-26	23.5	5.8	-8.0	31.0	21	44	0.94	1.62	1.41
190006DJW													69	67	31	65	68	55	46	44	22	48	49	32	63	46	45	42	39	38
JL 190180	1	SP 150013		89	101	106	107	99	98	104	97	96	93	91	90	101	106	109	101	108	109	78	98	107	93	96	99	102	92	98
291229300		JL 130145		67	69	60	18	45	55	29	50	32	1.71	0.26	10	15.3	2.5	76	24.3	129	-30	-1.8	-2.2	-7.1	28.0	10	23	0.92	-0.84	0.29
JL190180													70	54	18	69	60	49	34	36	19	39	47	29	59	38	37	33	31	31
DJW 200007	1	DJW 170029		82	127	120	87	105	129	113	126	119	76	96	112	127	120	136	129	116	102	132	103	106	102	100	122	130	101	115
291263200		DJW 170038		72	70	59	35	41	57	46	55	50	3.19	0.07	31	29.6	6.9	142	45.6	163	-23	28.0	-5.9	-7.1	34.4	12	48	3.25	0.36	1.62
200007DJW													75	59	35	70	59	55	47	49	41	53	42	24	57	53	53	51	49	49
SJ 220011	1	CJ 160009		105	99	106	104	102	103	99	100	94	99	119	93	99	106	106	100	101	101	100	101	100	102	99	96	89	107	104
94863842		DJW 070025		69	56	48	20	44	49	26	44	24	1.16	-0.79	13	14.0	2.5	68	23.4	99	-21	10.5	-4.9	-5.9	34.7	11	20	-0.11	1.11	0.77
OMANA													74	51	20	56	48	41	36	31	18	33	46	28	58	31	30	26	23	23
SJ 220013		CJ 160009		102	104	102	102	93	102	104	100	103	100	106	96	104	102	106	106	103	97	113	91	93	106	102	105	90	107	110
94864121		DJW 170056		66	53	36	21	38	45	20	40	24	1.10	-0.31	16	17.0	1.2	69	27.6	110	-17	17.5	3.3	-4.3	37.2	14	30	-0.02	1.15	1.27
OCEANIA													72	42	21	53	36	37	28	25	13	28	39	22	53	28	27	24	23	22
SJ 240001		SJ 180003		100	107	89	97	104	103	106	102	108	101	98	103	107	89	96	106	106	101	112	105	106	98	106	113	105	116	111
97439681		JL 180002		52	44	36	16	35	38	20	34	20	0.99	0.03	22	18.5	-2.5	45	27.7	121	-21	16.8	-7.4	-6.9	31.6	16	39	1.17	2.27	1.29
FALLON													54	43	16	44	36	32	26	23	14	26	38	21	47	25	25	21	20	20
SJ 240002	1	SJ 180003		83	109	107	99	94	101	109	100	108	89	90	99	109	107	114	110	111	105	104	90	104	94	108	114	108	111	106
97756852		JL 190180		64	65	41	18	32	49	23	44	26	2.10	0.32	19	19.8	2.7	88	30.6	143	-26	12.7	4.1	-6.5	29.2	17	40	1.44	1.59	0.92
FREDRICA													70	39	18	65	41	41	26	28	16	30	32	19	45	30	29	27	25	24
SJ 240004	15	SJ 180003		94	107	117	97	93	107	107	105	109	95	98	100	107	117	120	111	109	101	123	87	104	96	112	119	103	120	112
98011695		DJW 190006		65	65	44	22	33	50	25	45	28	1.52	0.00	20	18.5	6.0	103	32.0	132	-21	23.0	6.7	-6.7	30.6	19	45	1.01	2.76	1.37
FAITH													70	43	22	65	44	44	30	30	17	33	33	21	46	32	32	29	27	27
SJ 240005	3	SJ 180003		82	121	113	89	97	115	113	113	120	86	92	111	121	113	125	122	115	102	132	92	104	99	110	126	123	116	114
98011703		DJW 200007		64	66	41	23	31	49	29	45	32	2.30	0.23	29	25.9	4.7	115	39.8	160	-23	27.8	2.5	-6.5	32.2	18	53	2.63	2.19	1.59
FREDA													70	40	23	66	41	43	31	32	24	35	30	18	44	35	34	33	31	31
SJ 250001	9	CJ 210003		103	106	103	100	98	107			104	100	110	99	106	103	108	106	103	99	116	94	95	112	99	104	94	114	111
98655459		SJ 220013		51	38	25	13	28	33			14	1.09	-0.46	18	17.9	1.8	74	27.8	108	-18	19.0	1.3	-4.8	41.1	12	28	0.27	2.03	1.30
CANDICE													56	32	13	38	25	25	18	16	9	18	28	16	39	17	17	14	13	13

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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																													
SJ 250002 99559007 FANCY		SJ 180003 JL 180002	106 65	105 44	89 36	97 16	104 35	103 41	106 20	102 37	108 20	106 0.59 70	97 0.03 43	103 22 16	105 17.5 44	89 -2.6 36	94 40 32	104 26.5 26	106 121 23	101 -21 14	112 16.8 26	105 -7.4 38	106 -6.9 21	98 31.5 45	106 16 25	113 39 25	105 1.17 21	116 2.27 20	111 1.29 20
SJ 250003 99559023 CUPCAKE		CJ 210003 SJ 220010	106 62	105 35	105 26	95 13	101 27	108 34			107 16	104 0.74 69	104 -0.24 34	103 22 13	105 17.5 35	105 2.2 26	107 71 25	104 26.3 19	104 112 17	101 -21 11	115 18.3 19	96 -0.5 27	101 -6.0 15	109 39.4 38	104 15 19	110 35 18	103 1.04 16	118 2.50 15	112 1.40 15
SJ 250005 99587529 FALLON		SJ 180003 HDH 170132	75 65	117 46	111 44	89 20	104 32	110 42	111 20	108 38	116 22	75 3.24 70	75 0.91 45	111 29 20	117 23.9 46	111 4.0 44	120 102 37	116 35.5 26	113 150 24	98 -17 15	121 21.9 28	99 -2.8 33	110 -7.9 20	98 31.7 44	122 25 26	125 52 25	117 2.19 23	115 2.12 21	113 1.47 21
SJ 260001 6020133499 DIXIE	15	SJ 180003 DJW 190006	93 52	110 48	116 43	94 22	93 33	109 41	110 25	107 38	113 28	95 1.57 54	99 -0.03 43	103 23 22	110 20.0 48	116 5.7 43	121 104 38	114 33.6 30	111 144 30	103 -23 17	126 24.5 33	86 7.5 33	105 -6.8 21	96 30.6 45	116 22 32	122 49 32	106 1.29 29	120 2.80 27	112 1.44 27
SJ 260004 6020566599 JANET		SJ 180003 JL 180002	100 52	107 44	89 36	97 16	104 35	103 38	106 20	102 34	108 20	101 0.99 54	98 0.03 43	103 22 16	107 18.5 44	89 -2.5 36	96 45 32	106 27.7 26	106 121 23	101 -21 14	112 16.8 26	105 -7.4 38	106 -6.9 21	98 31.5 45	106 16 25	113 39 25	105 1.17 21	116 2.27 20	111 1.29 20

Selection List on Cow Value

Bulls 2 years and older

ID Name Sorted on ID		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	SJ 180003 FRED	DJW 130035	SZ 100046	0.4						8677	11170	10854	9431	8945	10258	11036	10254	
2	SJ 240003 FINN	SJ 180003	HDH 170132	0.3						8165	11064	11045	8920	10432	10449	11020	10443	

Selection List on Cow Value

Cows 2 years and older

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	DJW 200007	200007DJW	DJW 170029	DJW 170038	0.6					8272	12770	12059	8735	10541	12957	11346	12655	
1	DJW 190006	190006DJW	DJW 130035	DJW 070025	8.2					10169	10865	12468	9531	9748	11557	11034	11352	
2	SJ 240005	FREDA	SJ 180003	DJW 200007	3.2					8264	12166	11341	8923	9731	11549	11329	11345	
1	HDH 170132	HDH170132	JL 120005	HDH 150074	0.0					7569	11161	11170	8424	11847	10955	11121	10848	
2	JL 180002	JL180002	ML 130066	JL 150048	1.3					11569	10253	7048	10012	12053	10449			
3	SJ 220011	OMANA	CJ 160009	DJW 070025	0.7					10569	9956	10648	10420	10244	10349	9926	10044	
4	SJ 220013	OCEANIA	CJ 160009	DJW 170056	0.5					10266	10453	10236	10221	9338	10245	10420	10040	
5	SJ 240001	FALLON	SJ 180003	JL 180002	0.5					10052	10744	8936	9716	10435	10338	10620	10234	
6	SJ 240002	FREDRICA	SJ 180003	JL 190180	1.1					8364	10965	10741	9918	9432	10149	10923	10044	
7	SJ 240004	FAITH	SJ 180003	DJW 190006	15.0					9465	10765	11744	9722	9333	10750	10725	10545	
1	JL 190180	JL190180	SP 150013	JL 130145	1.4					8967	10169	10660	10718	9945	9855	10429	9750	

Selection List on Cow Value

Bull Calves younger than 2 years

ID Name Sorted on ID		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	SJ 260003 MAYWEATHER	SJ 180003	DJW 200007	3.2						8153	11950	11440	9023	9730	11441	11129	11239	
										★★★★☆								
1	SJ 250004 DIED	SJ 180003	SJ 220011	2.5						9651	10545	10736	9918	9532	10338	10522	10135	

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									
											★★★★★																
1	SJ	250005	FALLON	SJ 180003	HDH 170132	0.3					75	65	117	46	111	44	89	20	104	32	110	42	111	20	108	38	
											★★★★☆																
1	SJ	250001	CANDICE	CJ 210003	SJ 220013	8.7					103	51	106	38	103	25	100	13	98	28	107	33					
2	SJ	250002	FANCY	SJ 180003	JL 180002	0.5					106	65	105	44	89	36	97	16	104	35	103	41	106	20	102	37	
3	SJ	250003	CUPCAKE	CJ 210003	SJ 220010	0.4					106	62	105	35	105	26	95	13	101	27	108	34					
4	SJ	260001	DIXIE	SJ 180003	DJW 190006	15.0					93	52	110	48	116	43	94	22	93	33	109	41	110	25	107	38	
5	SJ	260004	JANET	SJ 180003	JL 180002	0.5					100	52	107	44	89	36	97	16	104	35	103	38	106	20	102	34	

	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.

