

Boerboel Genetic Evaluation

SA Stud Book
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Kennel Number: 683700



Estimated Breeding Values (EBVs)

Litter size and conformation traits are influenced by many genes, with every gene making a small contribution to the expression of the trait. These traits are, however, also influenced by physiological and physical environmental factors, for example the age and sex of the animal, the feeding and management the animal received and year x season effects. It is therefore not possible to know what the animal's genetic potential for the trait is by merely using the measurement.

With BLUP (*Best Linear Unbiased Prediction*) methodology an animal's genetic potential is predicted by making use of the genetic parameters (heritabilities and genetic correlations) of the breed, pedigree information, as well as the measurements of the animal as deviation from the average of the animals that were measured with the animal. Adjustments are made for differences in sex, age, classifier, management and year x season effects to ensure that fair comparisons are made amongst the animals. These predictions are called **EBVs (Estimated Breeding Values)** which indicates the animal's genetic potential for the specific trait and predicts the type of progeny that the animal will breed.

Pedigree information determines the genetic level at which the animal enters the genetic evaluation, it links the information of all relatives together and it is used to determine the genetic ranking of the breed. For young animals that were not yet measured, mid-parent EBVs are estimated, which are the average of the EBVs of the sire and dam. These breeding values are still inaccurate and can change a lot when more information (measurements) is included in subsequent genetic evaluations.

Breeding values therefore enables a breeder to compare his/her animals genetically to one another, as well as to all other animals of the breed. This Report gives a summary of the genetic levels of the active males and females of the relevant breeder in comparison to that of the breed for linearly classified traits and litter size. The genetic change that occurred over time can also easily be seen.

Breeding Value Indices (EBVi)

For easy interpretation, EBVs are standardised and expressed relative to the average (100) of the active animals of the breed, using 12 as standard deviation (SD). This means that an EBV of 100 is equal to the active average of the breed, and more or less 50% of the animals will have EBVi's of between 90 and 110, which indicates an average animal. Only 0.5% of the EBVi's will be lower than 64 and 0.5% will be higher than 136. Higher EBVi's indicate better genetic potential for the trait.

Accuracy

EBVs are published with an **accuracy value (%)**, which indicates how much info was available for the estimation of the EBV and with how much trust it can therefore be applied. Factors that influence the accuracy include heritability, completeness and correctness of pedigree information, number of own and measured relatives and the size of the group in which the animal was measured. When an accuracy of 85% and more is reached, the EBV should not change significantly with the inclusion of more information in subsequent genetic evaluations.

Kennel and Breed Averages: The different traits' averages of the breeder's active animals are compared to those of the breed in the Kennel and Breed Average Graphs and Tables. The breeder can therefore easily see for which traits the animals are above or below the average of the breed.

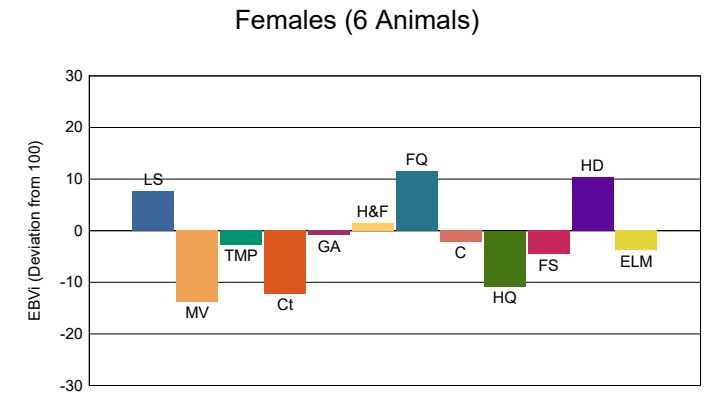
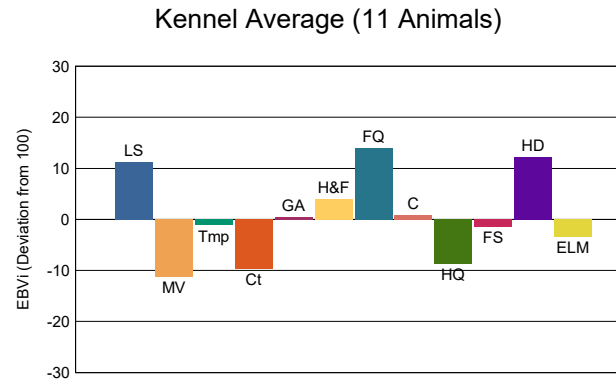
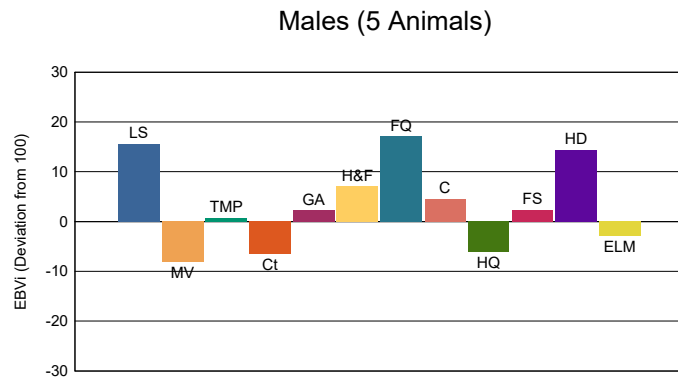
Genetic Trends: The Genetic Trends indicate the genetic change that occurred over time in the animals bred by the breeder compared to that of the breed. These are calculated as the average of the breeding values of all measured animals bred by the breeder, per year of birth.

Inbreeding: Inbreeding is the mating of related animals and is widely viewed as being harmful. The danger of inbreeding lies there in that it can gradually decrease fertility and survivability – a phenomenon known as inbreeding depression. It can cause lower conception rates, more abortions, more stillborn and weak offspring and a higher susceptibility to diseases. Indications in dogs include a low litter size as well as problems relative to fertility, such as invisible heat, behavioural problems when mating and low sperm quality. Overall, reduced litter size most likely reflects inbreeding depression in several traits, both physiological and behavioural, as well as a high frequency of non-viable embryos due to lethal alleles. Generally, the effects of inbreeding can become noticeable at a value of 6.25%, therefore it is generally recommended that individuals should have inbreeding coefficients of less than 6.25%. Breeders should therefore avoid matings causing inbreeding of more than 6.25% in the progeny. The theoretical maximum inbreeding coefficient is 50%. However, it should be noted that not all inbred animals show signs of inbreeding depression.

The data used in this evaluation was obtained from LOGIX from linear classifications that were done by the Breeder Society. All possible attempts have been made to present the information correctly. SA Stud Book does not accept responsibility for the use and interpretation of the information presented on animals in this publication.

Genetic Levels

Kennel Average relative to Breed Average, where Breed Average is indicated as 0



Average Breeding Value Indices (EBVi) where Breed Average = 100

Trait	All Animals	Males	Females
Litter size (LS)	111	116	108
Movement (Mv)	89	92	86
Temperament (Tmp)	99	101	97
Coat (Ct)	90	93	88
General Appearance	101	102	99
Head & Face (H&F)	104	107	102
Front Quarter (FQ)	114	117	112
Centre (C)	101	105	98
Hind Quarter (HQ)	91	94	89
Final Score (FS)	99	102	95
Hip Health (HH)	112	114	110
Elbow Health (ELM)	97	97	96

Inbreeding

Notes

Inbreeding primarily leads to decreased fertility, low survivability of pups and low disease resistance.

Inbreeding coefficients are calculated for all animals of the breed and indicates the probability that two genes of a pair are the same due to a common ancestor in the pedigree of the animal.

The adverse effects of inbreeding can be observed from 6.25% onwards.

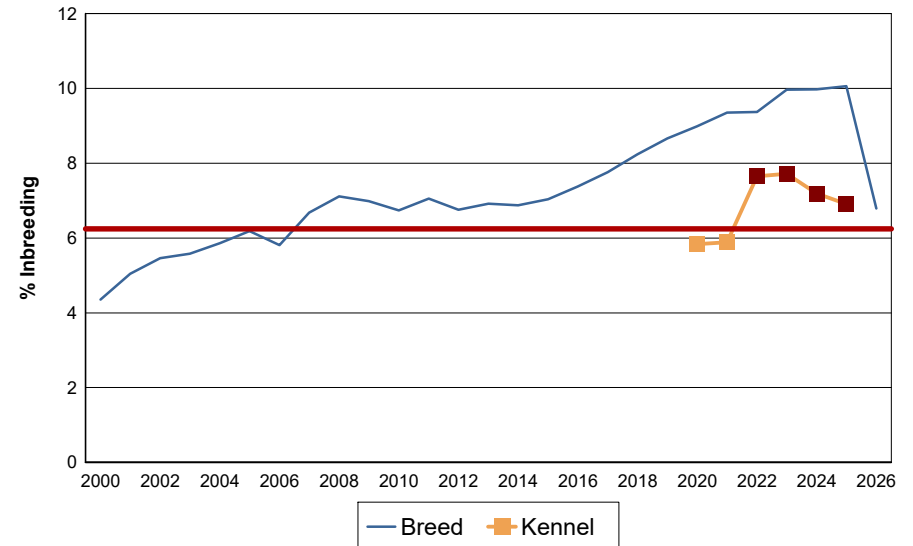
It is therefore highly recommended to record pedigree information as accurately. Inbreeding is dependent on pedigree information. Conventional methods for the calculation of inbreeding coefficients usually assume that unknown parents are unrelated, which is usually far from the truth. Inbreeding coefficients are therefore conservative indicators of the level of inbreeding.

Incomplete or incorrect pedigree information can be reported to SA Stud Book via the Breed Society.

Inbreeding Levels for Specific Matings

Progeny with Parents :	25%
Full Brother x Full Sister :	25%
Half Brother x Half Sister :	12.5%
One Common Grandparent :	6.25%
One Common Great-Grandparent :	3.125%

Rate of Inbreeding

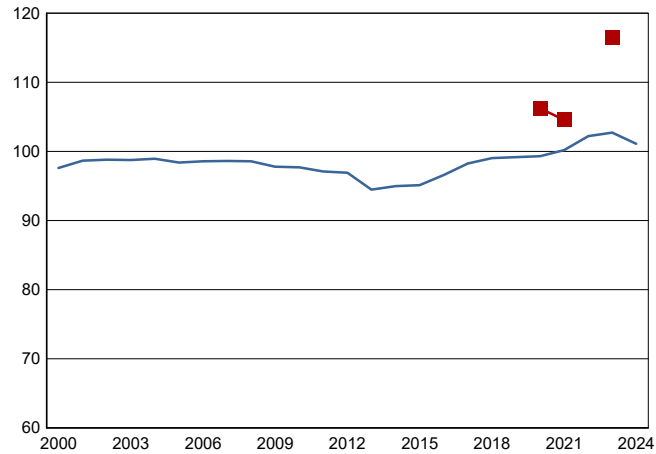


Inbreeding Levels

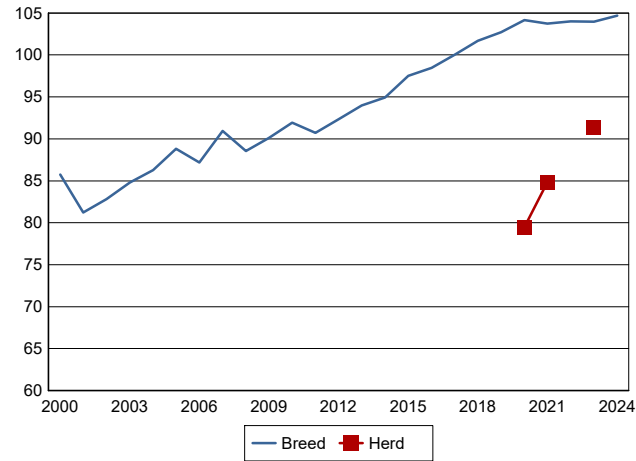
	All Animals		Males		Females		Sires		Dams	
	Kennel	Breed	Kennel	Breed	Kennel	Breed	Kennel	Breed	Kennel	Breed
Number	11	49007	5	25141	6	23857	5	3371	6	6287
Average Inbreeding	6.45	8.49	6.60	8.46	6.32	8.53	6.74	8.01	6.52	8.00
Number inbred	11	48727	5	24990	6	23728	5	24990	6	23728
Number >6.25% Inbr.	3	30600	2	15537	1	15058	3	15537	3	15058

Genetic Trends

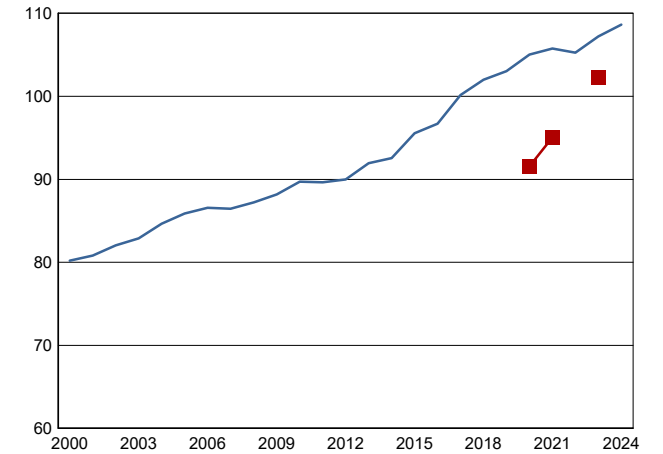
Litter Size



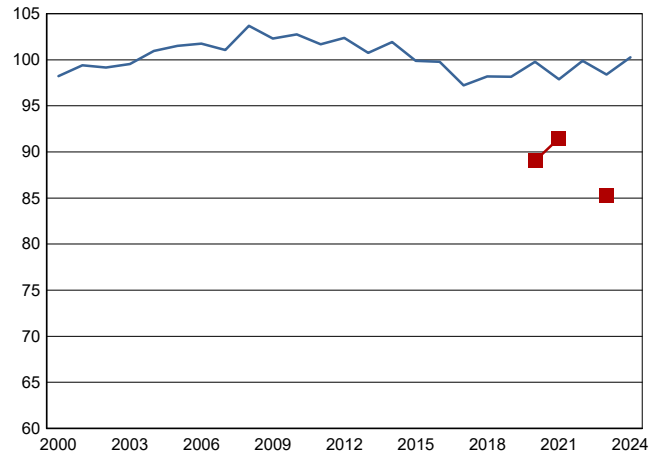
Movement



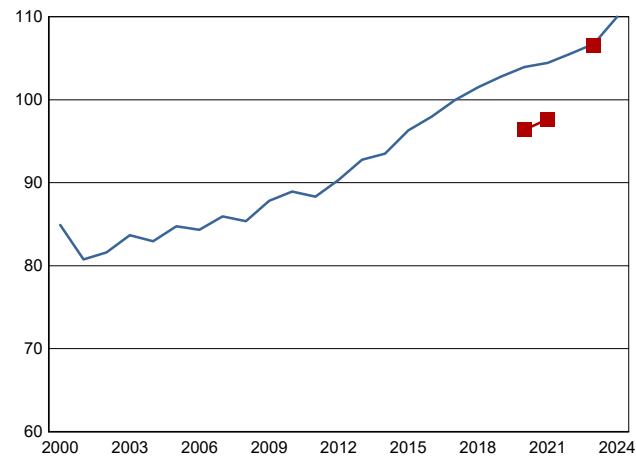
Temperament



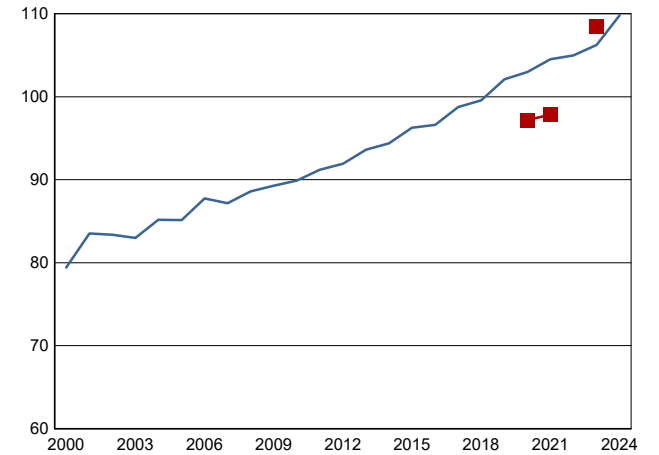
Coat



General Appearance

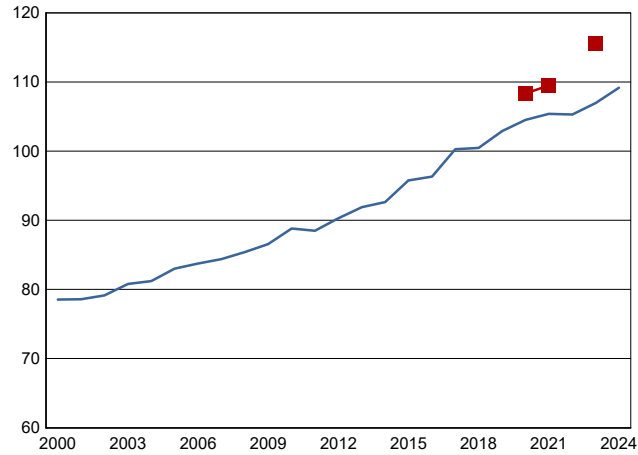


Head & Face

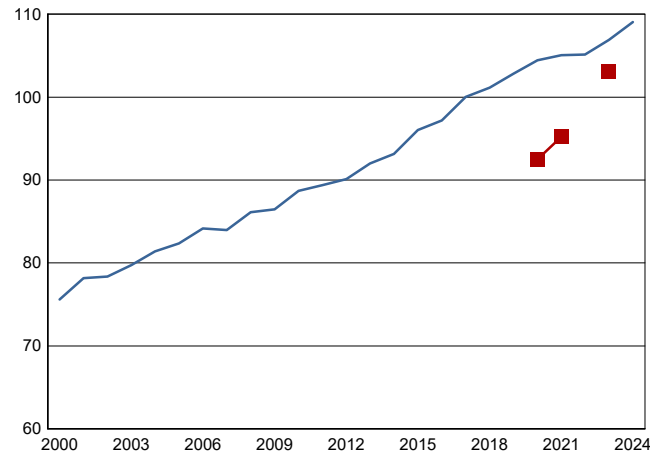


Genetic Trends

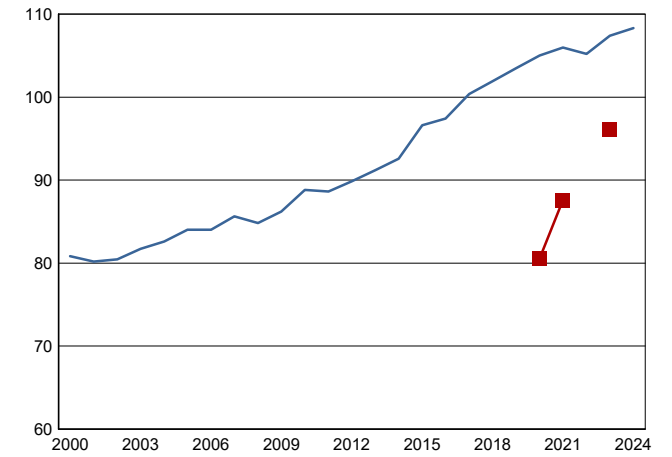
Front Quarter



Centre

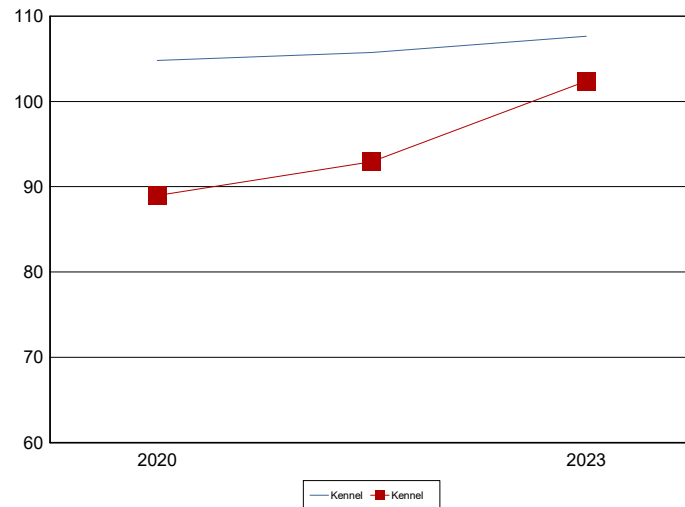


Hind Quarter

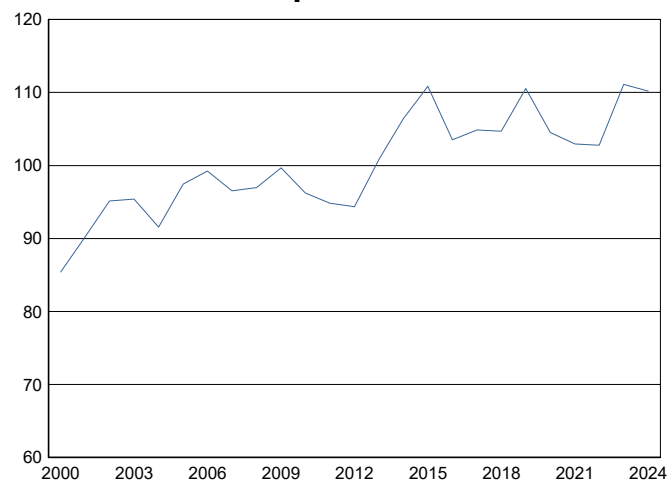


Final Score & Health Traits

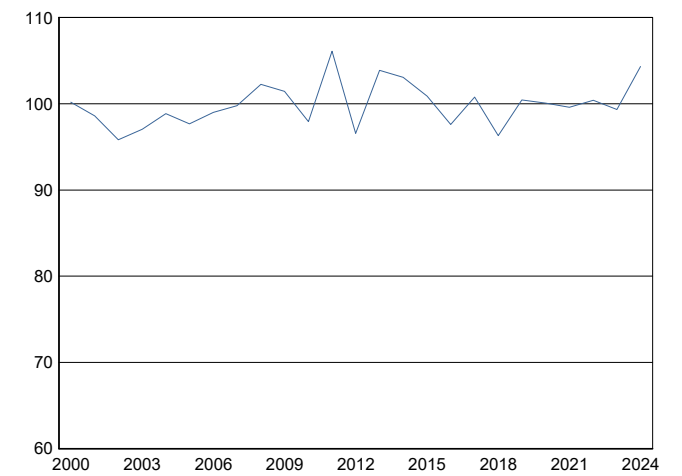
Final Score



Hip Health



Elbow Health



Estimated Breeding Value Indices (EBVi's)

Males

Inbreeding >6.25% is high

< 80

>= 100

>= 120

Animal Information			Inbreed	Health		Fertility	General			Appearance						Progeny :		Appraisal	Health		Progeny with litters
Name	BYr	Sire Dam	%	Hips Acc.	Elbows Acc.	Litter Size Acc.	Move-ment	Tempe-rament	Coat	General Appear.	Head & Face	Front Quarter	Centre	Hind Quarter	Final Score	Progeny	Litters	Progeny Kennels	Hips	Elbows	
BLACK IRON MIGHTY THOR		KLEIN SANDFONTEIN JUDGE	4.96	111	101	113	80	99	90	99	103	121	106	82	96	43	7	15			5
	2018	BLACK IRON IMANI		5	12	22	53	28	68	52	67	54	56	58	63			9			1
AFRIKA HALFNHALF ICE REBEL		AFRIKA ZAMBAMAX	8.53	124	93	133	104	112	86	116	126	126	117	111	119	41	5	3			1
	2020	AFRIKA MAYA V		5	18	35	49	24	63	48	62	49	51	53	58			3			1
BIG IRON BRUTUS		BLACK IRON MIGHTY THOR	5.62	115	103	106	108	97	119	101	107	112	105	108	109	17	3	2			
	2020	AFRIKA ASPEN		5	5	18	41	12	57	41	56	41	44	46	51			2			
BIG IRON ATLAS		BLACK IRON MIGHTY THOR	6.25	108	95	106	76	93	90	93	96	114	94	73	87						
	2021	DESERT SIENNA		5	5	5	33	5	49	34	48	34	36	38	44						
BIG IRON MANNY		AFRIKA HALFNHALF ICE REBEL	7.65	116	94	121	92	103	83	102	103	114	101	97	100						
	2022	BIG IRON MISS DOLLY		5	5	5	19	5	34	18	33	20	22	25	29						

Estimated Breeding Value Indices (EBVi's)

Females

Inbreeding >6.25% is high

< 80

>= 100

>= 120

Animal Information

Inbreed

Health

Fertility

General

Appearance

Progeny :

Appraisal

Health

Progeny with litters

Name	BYr	Sire Dam	%	Hips Acc.	Elbows Acc.	Litter Size Acc.	Move-ment	Tempe-rament	Coat	General Appear.	Head & Face	Front Quarter	Centre	Hind Quarter	Final Score	Progeny Progeny Litters	Appraisal Progeny Kennels	Health Hips Elbows	Progeny with litters
BIG IRON LADY	2020	BLACK IRON MIGHTY THOR	6.25	108	95	106	70	92	88	101	108	115	95	71	91				
		DESERT SIENNA		5	5	5	33	5	51	33	49	34	37	39	45				
BIG IRON MISS DOLLY	2020	BLACK IRON MIGHTY THOR	6.25	108	95	108	79	94	80	89	81	103	84	83	80	16	2		
		DESERT SIENNA		5	5	11	33	5	51	33	49	34	37	39	45				
BIG IRON FANCY	2021	BLACK IRON MIGHTY THOR	6.25	108	95	104	80	98	77	99	97	112	99	86	91	12	2	1	
		DESERT SIENNA		5	5	11	29	5	44	29	43	30	32	34	39		1		
BIG IRON RUBY	2021	BLACK IRON MIGHTY THOR	5.62	115	103	106	96	94	106	98	106	113	103	95	102				
		AFRIKA ASPEN		5	5	18	33	5	45	33	45	34	36	38	41				
BIG IRON MAYA	2021	BIG IRON BRUTUS	5.90	110	96	103	100	101	95	101	107	109	98	103	104				
		DESERT SIENNA		5	5	5	26	5	44	27	43	27	29	32	38				
BIG IRON PRECIOUS	2023	AFRIKA HALFNHALF ICE REBEL	7.65	116	94	119	92	105	81	107	111	119	108	98	105				
		BIG IRON FANCY		5	5	5	17	5	31	16	30	18	20	23	27				

Estimated Breeding Value Indices (EBVi's)

Sires

Inbreeding >6.25% is high

< 80

>= 100

>= 120

Sire Information			Inbreed	Health		Fertility	General			Appearance						Progeny :		Appraisal	Health		Progeny
Name	BYr	Sire Dam	%	Hips Acc.	Elbows Acc.	Litter Size Acc.	Move-ment	Tempe-rament	Coat	General Appear.	Head & Face	Front Quarter	Centre	Hind Quarter	Final Score	Progeny Litters	Progeny Kennels	Hips	Elbows	with litters	
KLEIN SANDFONTEIN JUDGE		KLEIN SANDFONTEIN HUEY	7.01	132	96	117	101	121	107	119	108	147	123	109	118	290 35	65 48	9 11	33 9		
	2016	KLEIN SANDFONTEIN ASARA		41	54	52	77	56	87	76	86	77	79	81	84						
BLACK IRON MIGHTY THOR		KLEIN SANDFONTEIN JUDGE	4.96	111	101	113	80	99	90	99	103	121	106	82	96	43 7	15 9		5 1		
	2018	BLACK IRON IMANI		5	12	22	53	28	68	52	67	54	56	58	63						
AFRIKA ZAMBAMAX		AFRIKA RAMBOMAX	7.57	133	105	117	112	106	87	110	111	108	108	103	108	35 3	7 7		4 2		
	2019	DEO-HAN ZIGGY		36	54	46	61	37	74	60	73	62	64	66	70						
AFRIKA HALFNHALF ICE REBEL		AFRIKA ZAMBAMAX	8.53	124	93	133	104	112	86	116	126	126	117	111	119	41 5	3 3		1 1		
	2020	AFRIKA MAYA V		5	18	35	49	24	63	48	62	49	51	53	58						
BIG IRON BRUTUS		BLACK IRON MIGHTY THOR	5.62	115	103	106	108	97	119	101	107	112	105	108	109	17 3	2 2				
	2020	AFRIKA ASPEN		5	5	18	41	12	57	41	56	41	44	46	51						

Estimated Breeding Value Indices (EBVi's)

Dams

Inbreeding >6.25% is high

< 80

>= 100

>= 120

Animal Information			Inbreed	Health		Fertility	General			Appearance						Progeny :		Appraisal	Health		Progeny with litters
Name	BYr	Sire Dam	%	Hips Acc.	Elbows Acc.	Litter Size Acc.	Move- ment	Tempe- r ament	Coat	General Appear.	Head & Face	Front Quarter	Centre	Hind Quarter	Final Score	Progeny Litters	Progeny Kennels		Hips	Elbows	
AFRIKA ASPEN	2015	AFRIKA SAKABUKA	4.47	119	104	99	112	89	122	97	108	104	99	109	108	6	1	2			1
		MIGHTY BBD LOLA		24	35	46	53	31	66	52	65	53	55	57	61			2			1
BLACK IRON IMANI	2016	ELEVATION PEANUT	6.71	89	105	106	89	103	61	90	113	111	120	89	102	16	2	1			1
		SPITSVUUR BBD MNANDI		5	5	22	48	20	66	48	64	49	52	54	60			1			1
AFRIKA MAYA V	2017	MES RUBENSTEIN	7.77	115	82	150	106	117	114	113	124	133	108	114	122	26	2	5			5
		AMADEO AZURA		25	35	57	64	43	76	63	75	64	66	68	72			5			1
DESERT SIENNA	2017	AFRIKA BO	7.66	105	89	100	78	90	87	95	91	102	83	82	84	37	3	13			4
		AFRIKA OHANA		5	5	25	44	17	61	42	60	45	47	49	55			8			1
BIG IRON MISS DOLLY	2020	BLACK IRON MIGHTY THOR	6.25	108	95	108	79	94	80	89	81	103	84	83	80	16	2				
		DESERT SIENNA		5	5	11	33	5	51	33	49	34	37	39	45						
BIG IRON FANCY	2021	BLACK IRON MIGHTY THOR	6.25	108	95	104	80	98	77	99	97	112	99	86	91	12	2	1			
		DESERT SIENNA		5	5	11	29	5	44	29	43	30	32	34	39			1			

