

Boerboel Genetic Evaluation

SA Stud Book
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Kennel Number: 680241



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.

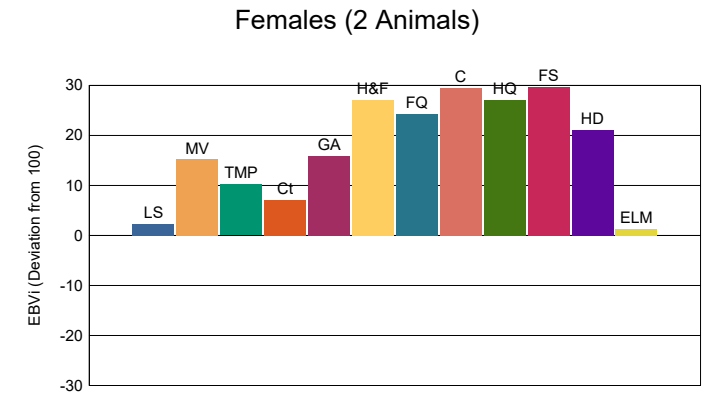
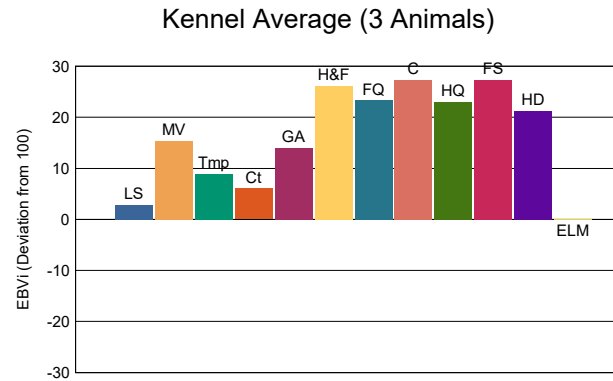
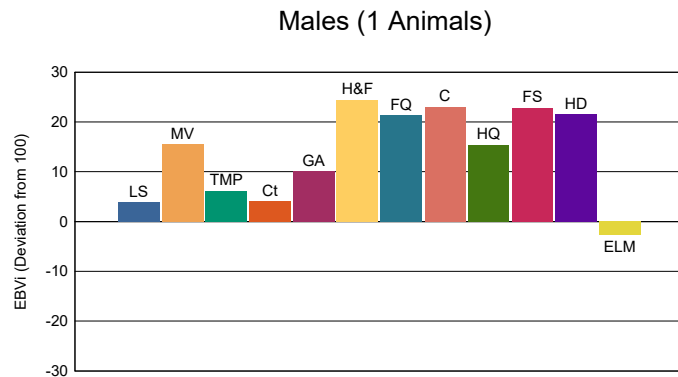
Genetic Trends: The Genetic Trends indicate the genetic change that occurred over time in the animals bred by the breeder compared to that of the breed. These are calculated as the average of the breeding values of all measured animals bred by the breeder, per year of birth.

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)	103	104	102
Movement (Mv)	115	116	115
Temperament (Tmp)	109	106	110
Coat (Ct)	106	104	107
General Appearance	114	110	116
Head & Face (H&F)	126	124	127
Front Quarter (FQ)	123	121	124
Centre (C)	127	123	130
Hind Quarter (HQ)	123	115	127
Final Score (FS)	127	123	130
Hip Health (HH)	121	122	121
Elbow Health (ELM)	100	97	101

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.

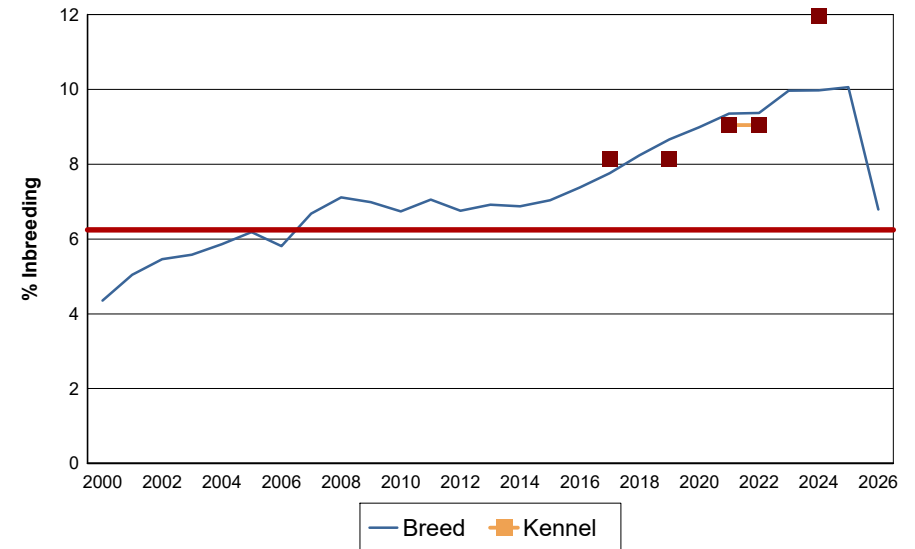
It is therefore highly recommended to record pedigree information as accurately. Inbreeding is dependent on pedigree information. Conventional methods for the calculation of inbreeding coefficients usually assume that unknown parents are unrelated, which is usually far from the truth. Inbreeding coefficients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

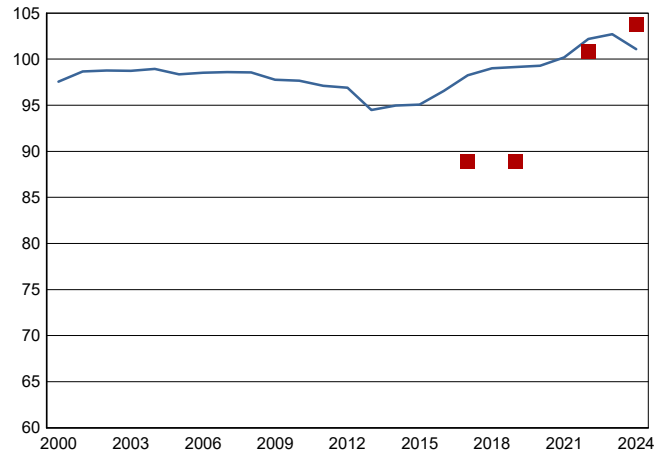


Inbreeding Levels

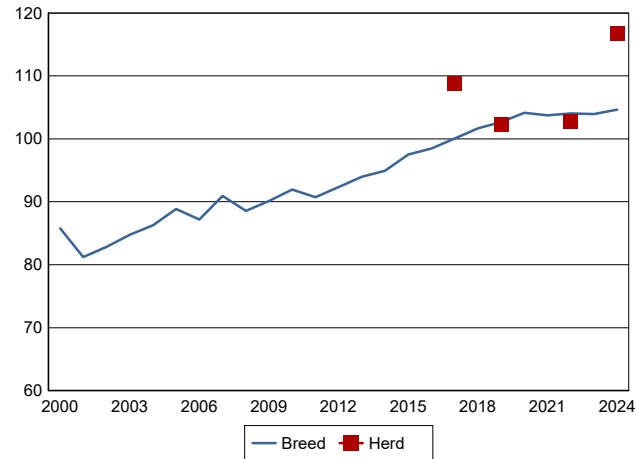
	All Animals		Males		Females		Sires		Dams	
	Kennel	Breed	Kennel	Breed	Kennel	Breed	Kennel	Breed	Kennel	Breed
Number	3	49007	1	25141	2	23857	2	3371	2	6287
Average Inbreeding	11.00	8.49	11.98	8.46	10.51	8.53	9.90	8.01	13.63	8.00
Number inbred	3	48727	1	24990	2	23728	2	24990	2	23728
Number >6.25% Inbr.	3	30600	1	15537	2	15058	2	15537	2	15058

Genetic Trends

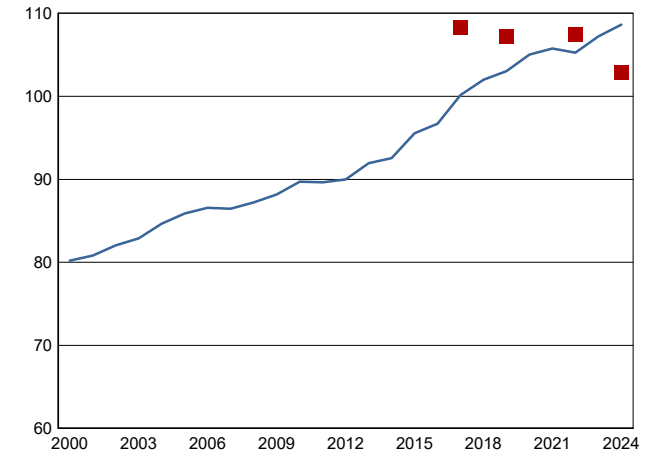
Litter Size



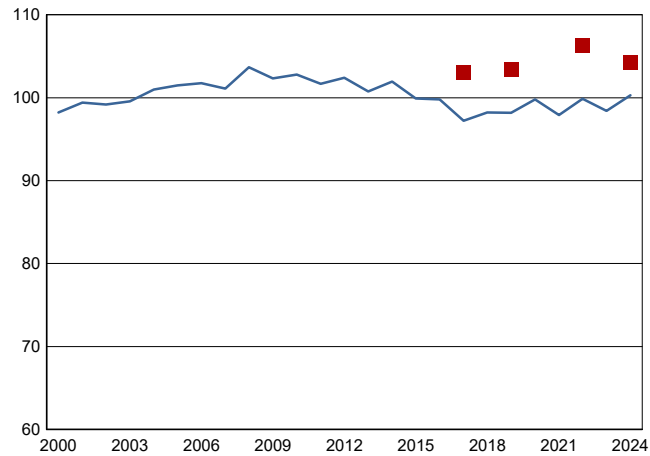
Movement



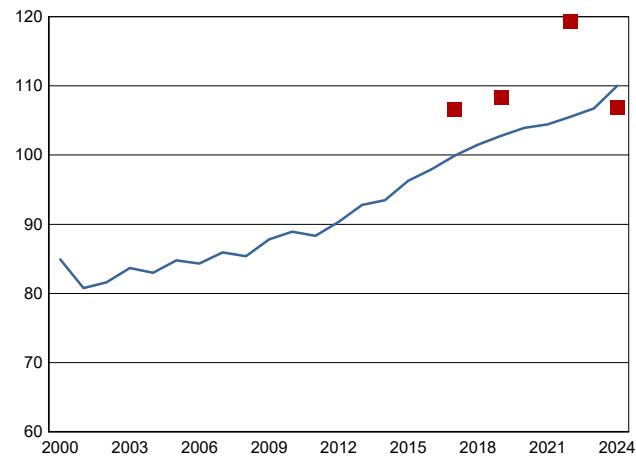
Temperament



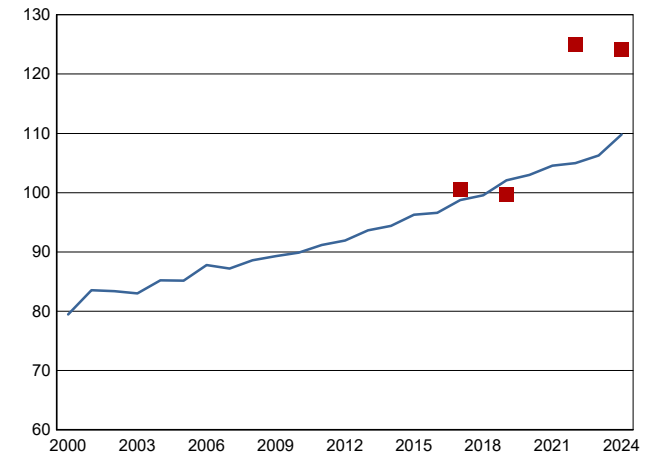
Coat



General Appearance

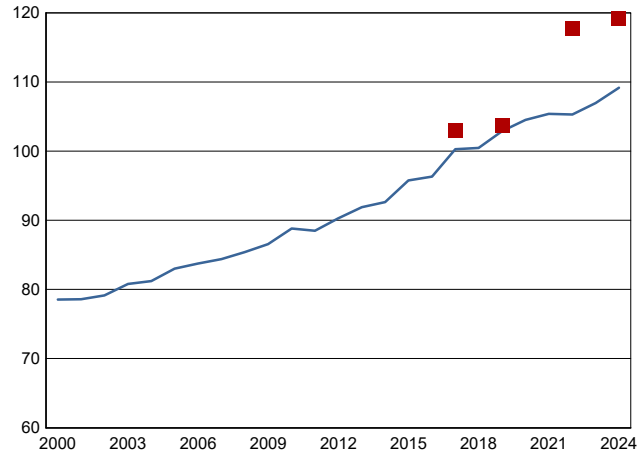


Head & Face

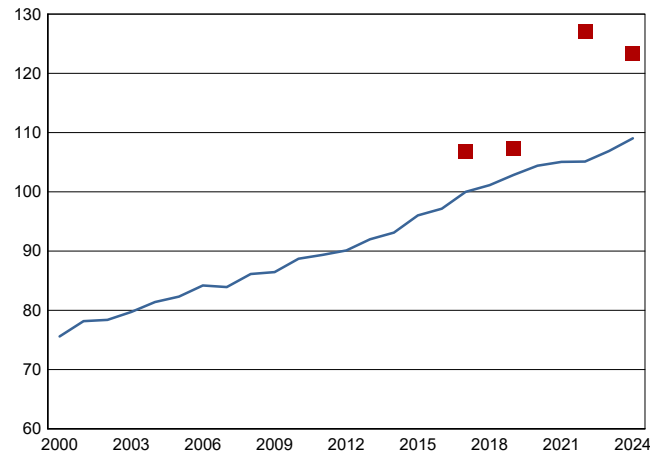


Genetic Trends

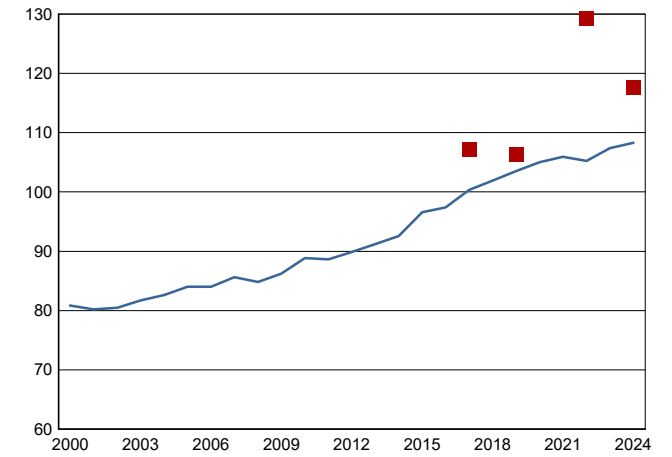
Front Quarter



Centre

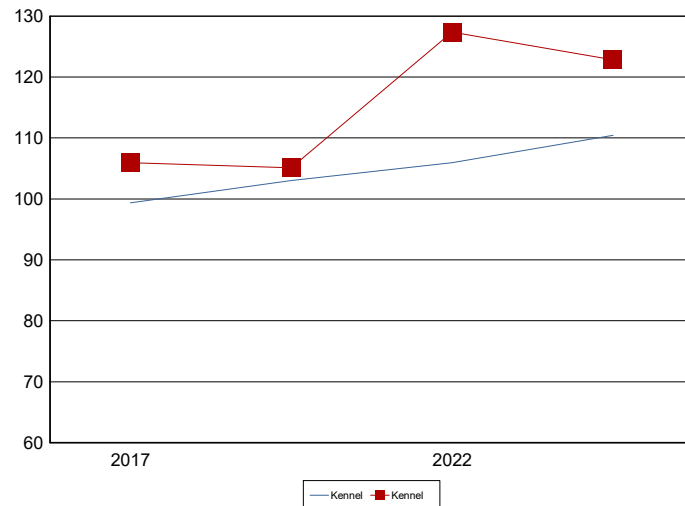


Hind Quarter

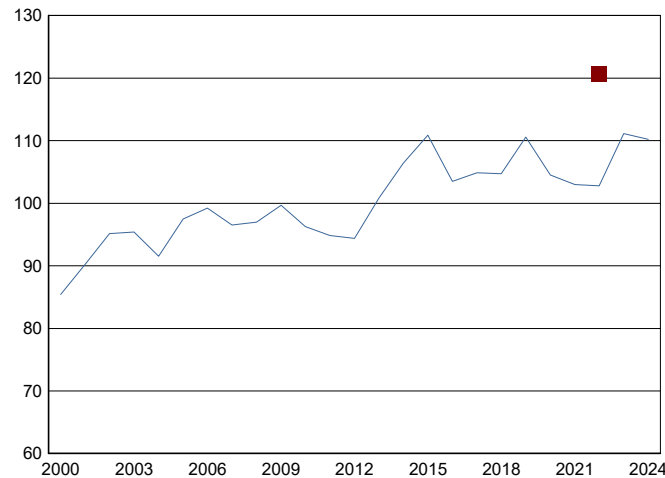


Final Score & Health Traits

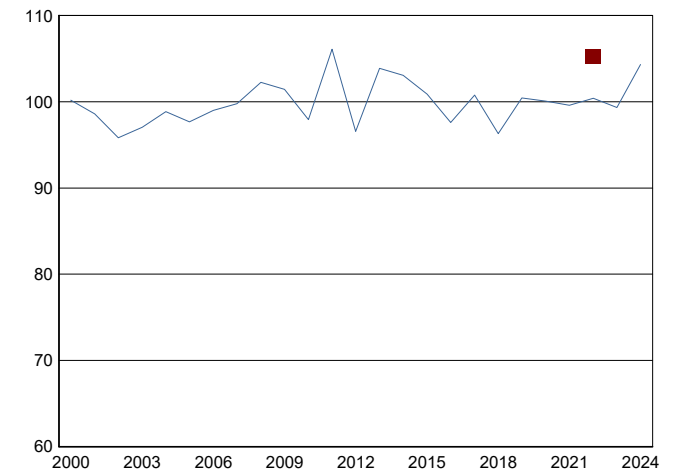
Final Score



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	Sire	Dam	%	Hips	Elbows	Litter Size	Move-	Tempe-	Coat	General	Head &	Front	Centre	Hind	Final	Progeny	Litters	Progeny	Hips	Elbows	with litters
	BYr	Dam		Acc.	Acc.	Acc.	ment	rament		Appear.	Face	Quarter		Quarter	Score			Kennels			
ROCK WALL DUDE		BLACK IRON TUG	11.98	122	97	104	116	106	104	110	124	121	123	115	123						
	2024	ROCK WALL ZARA		5	5	5	29	5	44	28	43	30	32	35	39						

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 Litters	Progeny Kennels		Hips	Elbows	
ROCK WALL ZARA		OUTLAW DRAX	9.05	121	105	101	108	110	108	116	123	120	129	136	130	10	3	3			
	2022	MIDDELPOS BBD MADDIE		5	5	11	42	12	58	42	57	43	45	48	53						
ROCK WALL ARI		BLACK IRON TUG	11.98	122	97	104	122	111	106	116	131	129	130	118	130						
	2024	ROCK WALL ZARA		5	5	5	36	5	54	35	53	37	39	42	48						

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 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	
OUTLAW DRAX		BLACK IRON TUCKER	9.71	112	92	90	125	122	114	130	135	132	144	145	145	21	5	11	2	3
	2019	BARBARIAN ATHENA		9	37	8	55	25	72	54	71	56	58	61	66		11			2
BLACK IRON TUG		BLACK IRON KEEPER	10.08	123	89		123	102	100	104	126	122	117	94	116	40	4	11		
	2022	BLUE LINE ZUMA		12	38		54	23	72	53	71	55	58	60	66		8			

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	
MIDDELPOS BBD MADDIE		AFRIKA LEO 5	18.20	129	118	112	82	98	94	105	118	109	107	108	109	6	2	4	1	1	1
	2017	MIDDELPOS BBD DIXIE		14	27	46	56	37	67	56	66	57	58	60	63			4			1
ROCK WALL ZARA		OUTLAW DRAX	9.05	121	105	101	108	110	108	116	123	120	129	136	130	10		3			
	2022	MIDDELPOS BBD MADDIE		5	5	11	42	12	58	42	57	43	45	48	53			3			

