

# Boerboel Genetic Evaluation

**SA Stud Book**  
February 2026

**0 0 M.NEL & D. DAVIDS**

4 TUNNY STREET

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STRANDFONTEIN

7789



Kennel Number: 700463



## 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.

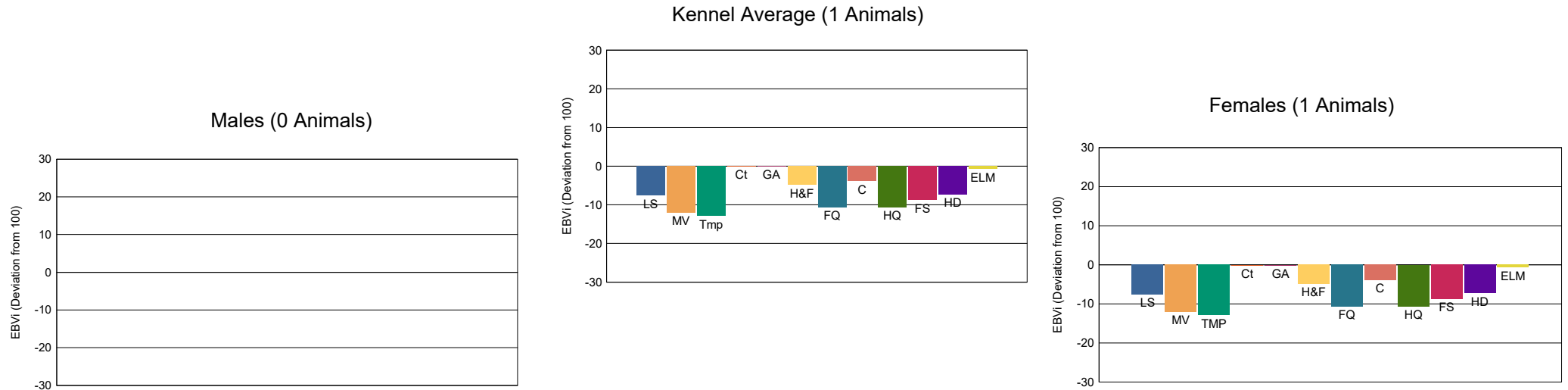
**Genetic Trends:** The Genetic Trends indicate the genetic change that occurred over time in the animals bred by the breeder compared to that of the breed. These are calculated as the average of the breeding values of all measured animals bred by the breeder, per year of birth.

**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)   | 92          |       | 92      |
| Movement (Mv)      | 88          |       | 88      |
| Temperament (Tmp)  | 87          |       | 87      |
| Coat (Ct)          | 100         |       | 100     |
| General Appearance | 100         |       | 100     |
| Head & Face (H&F)  | 95          |       | 95      |
| Front Quarter (FQ) | 89          |       | 89      |
| Centre (C)         | 96          |       | 96      |
| Hind Quarter (HQ)  | 89          |       | 89      |
| Final Score (FS)   | 91          |       | 91      |
| Hip Health (HH)    | 93          |       | 93      |
| Elbow Health (ELM) | 99          |       | 99      |

# 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.

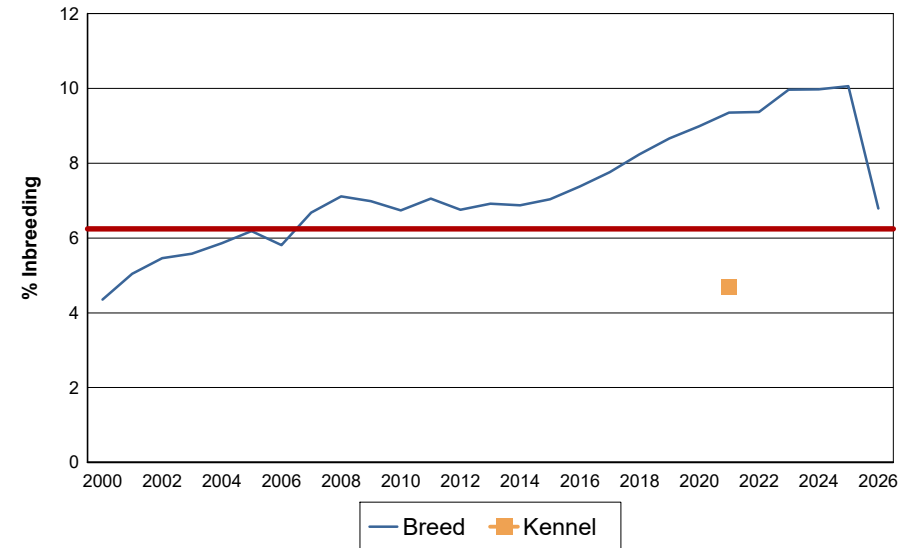
It is therefore highly recommended to record pedigree information as accurately. Inbreeding is dependent on pedigree information. Conventional methods for the calculation of inbreeding coefficients usually assume that unknown parents are unrelated, which is usually far from the truth. Inbreeding coefficients 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              | 1           | 49007 | 0      | 25141 | 1       | 23857 | 1      | 3371  | 1      | 6287  |
| Average Inbreeding  | 4.68        | 8.49  |        | 8.46  | 4.68    | 8.53  | 9.08   | 8.01  | 5.30   | 8.00  |
| Number inbred       | 1           | 48727 |        | 24990 | 1       | 23728 | 1      | 24990 | 1      | 23728 |
| Number >6.25% Inbr. |             | 30600 |        | 15537 |         | 15058 | 1      | 15537 |        | 15058 |

## Estimated Breeding Value Indices (EBVi's)

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# 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               |      | Sire           | %       | Hips   | Elbows | Litter Size | Move-ment | Tempe-rament | Coat | General Appear. | Head & Face | Front Quarter | Centre | Hind Quarter | Final Score | Progeny Litters | Progeny Kennels | Hips      | Elbows |  |                      |
|                    | BYr  | Dam            |         | Acc.   | Acc.   | Acc.        |           |              |      |                 |             |               |        |              |             |                 |                 |           |        |  |                      |
| DA NEL SKYLAR      |      | ZOAR DIESEL 4  | 4.68    | 93     | 99     | 92          | 88        | 87           | 100  | 100             | 95          | 89            | 96     | 89           | 91          |                 |                 |           |        |  |                      |
|                    | 2021 | PIONEER PHOEBE |         | 5      | 5      | 5           | 5         | 5            | 23   | 5               | 23          | 5             | 10     | 13           | 19          |                 |                 |           |        |  |                      |

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 |                      |
| ZOAR DIESEL 4    |      | ZOAR MAXIMUS I | 9.08    | 85        | 96          | 97               | 102       | 83           | 108  | 89              | 78          | 80            | 83     | 88           | 82          | 3    1          |                 |        |        |                      |
|                  | 2016 | ZOAR ZOE       |         | 5         | 5           | 5                | 5         | 5            | 24   | 5               | 23          | 5             | 5      | 6            | 17          |                 |                 |        |        |                      |

# 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               |      | Sire           | %       | Hips   | Elbows | Litter Size | Move-   | Tempe-r | Coat | General    | Head & | Front   | Centre | Hind    | Final | Progeny   | Litters | Progeny   | Hips   | Elbows |                      |
|                    | BYr  | Dam            |         | Acc.   | Acc.   | Acc.        | ment    | ament   |      | Appear.    | Face   | Quarter |        | Quarter | Score |           |         |           |        |        |                      |
| PIONEER PHOEBE     |      | DELATRO DJANGO | 5.30    | 101    | 103    |             | 74      | 92      | 92   | 111        | 112    | 99      | 110    | 91      | 101   | 3         | 1       |           |        |        |                      |
|                    | 2019 | SPARTACUS XENA |         | 5      | 5      |             | 45      | 15      | 61   | 44         | 60     | 46      | 48     | 51      | 56    |           |         |           |        |        |                      |

