

# Boer Goat Genetic Analysis

SA Stud Book  
04 November 2024

THAILAND BOER GOAT STUD

29B TAWERA ROAD  
AUCKLAND

-



FDM: 1862



CERTIFICATE  
OF QUALITY  
Valid up to  
1 April 2024

# General Information

This **Genetic Report** of your flock enables you to determine the genetic merit and potential of the animals in your herd relative to that of the breed. An animal's performance is determined by two factors, namely the environment and genetics. Good nutrition and management can improve performance, but an animal cannot perform better than its genetic potential. Superior performance due to the environment cannot be carried over to the next generation. It is therefore extremely important not to neglect genetic progress of your flock. Due to the interaction between environment and genetics, it is difficult to identify genetically superior animals on performance data. Estimated Breeding Values (EBVs) are therefore predicted for every animal to determine its genetic potential, as well as its worth as a parent for the next generation. Through the use of EBVs, animals can be compared fairly **within the breed**, therefore across herds, years and production systems. Results presented in this report allow the breeder to identify the underlying genetics of the animals.

## Genetic parameters

Genetic parameters (heritability and genetic correlations) are estimated on a breed-basis and are required for the prediction of breeding values. The **heritability** refers to the portion of the variation of a trait in a population that is due to transferrable genetics (the rest of the variation can be attributed to the environment and non-transferrable genetics). Some traits are genetically correlated, which means that a change in one trait will lead to changes in other traits. The strength of this association amongst traits is referred to as a **genetic correlations** and can be desirable or undesirable.

## Breeding Values

The prediction of EBVs makes use of performance recordings of the animal as well as those of its relatives, pedigree information and genetic parameters. The deviation of the animal's measurement relative to the average of its contemporary group, forms the basis for identifying the animal's genetic potential for the trait. A **contemporary group** is a group of animals that have been exposed to the same environmental and biological effects, including herd, year, sex and age effects. After adjusting for differences in these effects, animals can fairly be compared and the difference in performance that still persist are then assumed to be due to differences in the genetic merit of the animals.

The EBV predicted for an animal at birth and until it has been measured, is the average EBV of its parents, since the animal received half of its genes from each parent. This mid-parent value makes the assumption that the same half of the parents' genes are carried over to all their offspring. In reality, each offspring receives a random sample of each parent's genes,

therefore mid-parent EBVs are still of low accuracy, but it does indicate the genetic level that can be expected due its parental history. An animal's true genetic merit can be predicted more accurately as more information becomes available, eg. when the animal has been measured or when the number of relatives with measurements increases. Estimated breeding values therefore change over time as more information becomes available. EBVs of animals are published with an **accuracy** (%), which indicates how much information was available for the estimation of breeding values and therefore the confidence with which a breeder can use it. Factors that influence the accuracy of an EBV are the heritability of the trait, the number of measured relatives, the size of the contemporary group, the precision with which the measurements were taken and the completeness of pedigree information. An EBV with an accuracy of 85% or more is less likely to change significantly with subsequent genetic analyses.

## Interpretation of breeding values

EBVs are expressed around a **base year** (5 years ago), which means that the average breeding value of the base year is set as zero and all breeding values are expressed relative to this average. An animal with an EBV of +1kg for weaning weight is therefore genetically superior by 1kg compared to an average animal born in the base year. EBVs therefore express genetic merit of animals relative to each other. The true performance of an animal cannot be calculated from the EBV, but it enables the breeder to know which animals will make a better contribution to the next generation. For easier interpretation EBVs are also expressed as breeding value indices. For these indices the average value of the **active population** is set as 100 with a standard deviation of 12. An index of 76 therefore indicates that the animal is 2 standard deviations below the average and an index of 112 indicates that the animal is 1 standard deviation above the average of the active population for the specific trait. Please note that negative EBVs are favourable for Inter-Lambing Period and Age at First Lambing, therefore shorter inter-lambing periods and younger ages at first lambing indicates better fertility. However, breeding value indices are expressed in the same way for all traits, therefore higher indices indicates desirability for the traits and lower indices are undesirable. This makes it easy to identify superior animals for all traits.

*The data used in this evaluation has been obtained from LOGIX, as supplied by breeders. Everything possible had been done to present the information correctly. SA Stud Book does not take any responsibility for the use and interpretation of the information from this publication.*

# Selection Indices

It is easy to select on a single trait, but that is not the best approach to follow. Selecting on only one trait can lead to the deterioration of performance in other traits due to genetic correlations. There are different traits that are important, some being more important than others. A selection index combines multiple traits, each with an economic weight to take the different levels of importance into account. EBVs for different traits cannot simply be added together, since the unit of measurement and range of the values differ and in some cases negative values are favoured. These factors are accounted for in the compilation of a selection index. An overall selection index includes EBVs of all the traits of economic importance, while other selection indices are more focused on specific breeding objectives. Selection indices are expressed around 100, with 100 being the average of the active population, with a standard deviation of 12. A selection index of 124 is therefore 2 standard deviations above the average and an index of 88 is one standard deviation below the average of the active animals of the population.

Two Indices are constructed for the Boer Goat breed, namely the Logix Merit Index and the Reproduction Index. These indices, their purpose and the contribution of the different traits to the indices are summarised as follows :

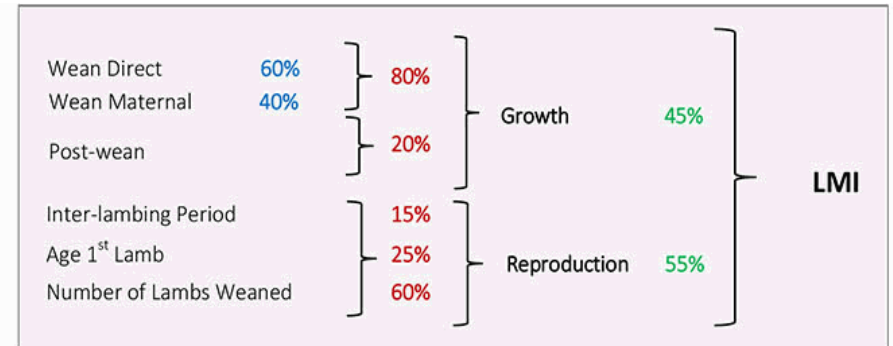
## Logix Merit Index (LMI)

This index combines all the traits to select for a balanced, profitable animal that is fertile and delivers a desirable level of production. Selection based on the LMI will lead to breeding of balanced animals that will have the genetic potential to wean at a heavier weight (both due to its own potential and having dams that produce sufficient milk), lambs at an early age, lambs regularly and give multiple lambs. This value is especially important for sustainability, which requires the selection of good, productive replacement animals for the flock.

The LMI is constructed as follows :

$$LMI = (0.1375 * AFL) + (0.0825 * ILP) + (0.216 * Wean Dir) + (0.144 * Wean Mat) + (0.33 * N\_Lambs\_Weaned) + (0.09 * Post-Wean Dir)$$

Schematically the LMI can be explained as follows :



## Reproduction Index (RI)

This index includes Weaning Maternal, Number of Lambs Weaned, Age at First Lambing and Inter-lambing Period. This is especially an important index to consider in the development of a dam line.

The RI is constructed as follows :

$$(0.2 * AFL) + (0.2 * ILP) + (0.3 * Wean Mat) + (0.3 * N\_Lambs\_Weaned)$$

Schematically it can be explained as follows :



It is always important to consider the traits that contribute to the index individually when selection of animals is based on indices. It sometimes happen that an animal receives a good index due to its exceptional genetic merit of a specific trait, while some of the other traits of the animal in the index might be at undesirable levels for the specific flock's breeding objective, but masked in the index due to the exceptionality of that trait. A sound procedure is to rank animals based on the relevant selection index and then eliminate animals from the list that do not conform towards the flock's breeding objectives when considering the individual traits. Make use of all the available information.

# Active Genetic Levels

## Genetic Averages : Breeding Values

| Trait                   | Flock |       |       | Breed |       |       |
|-------------------------|-------|-------|-------|-------|-------|-------|
|                         | All   | Rams  | Ewes  | All   | Rams  | Ewes  |
| Weaning Weight Direct   | -0.28 | -0.31 | -0.21 | -0.24 | -0.19 | -0.26 |
| Weaning Weight Maternal | -0.04 | 0.06  | -0.24 | -0.08 | -0.10 | -0.07 |
| Weaning Weight Combined | -0.18 | -0.10 | -0.35 | -0.20 | -0.19 | -0.20 |
| Post-wean Weight        | -0.33 | -0.28 | -0.43 | -0.09 | -0.01 | -0.13 |
| Number Lambs Weaned     | 0.85  | 0.75  | 1.05  | -0.19 | -0.31 | -0.13 |
| Total Weight Weaned     | 0.19  | 0.20  | 0.18  | -0.43 | -0.47 | -0.41 |
| Age at First Lambing    | -1.74 | 0.31  | -5.82 | 0.40  | 0.44  | 0.38  |
| Inter-lambing Period    | -2.55 | -3.40 | -0.85 | -0.14 | -0.14 | -0.14 |
| Selection Indices       |       |       |       |       |       |       |
| Logix Merit Index       | 104   | 104   | 104   | 99    | 99    | 99    |
| Reproduction Index      | 108   | 109   | 106   | 100   | 100   | 101   |
| Inbreeding              |       |       |       |       |       |       |
| Inbreeding (%)          | 3.30  | 7.64  | 2.82  | 4.78  | 5.29  | 4.58  |
| Number of Animals       |       |       |       |       |       |       |
| Number of Animals       | 40    | 4     | 36    | 36702 | 10731 | 25872 |

\*\* Averages of all active animals in the flock.

## Breeding Value Indices

| Trait                   | Flock ** |       |       |
|-------------------------|----------|-------|-------|
|                         | All      | Rams  | Ewes  |
| Weaning Weight Direct   | 97.9     | 97.6  | 98.6  |
| Weaning Weight Maternal | 101.4    | 104.2 | 96.0  |
| Weaning Weight Comb     | 99.2     | 100.6 | 96.4  |
| Post-wean Weight        | 96.4     | 96.7  | 95.7  |
| Number Lambs Weaned     | 105.8    | 105.2 | 106.9 |
| Total Weight Weaned     | 102.8    | 102.8 | 102.8 |
| Age First Lambing       | 102.3    | 99.5  | 107.7 |
| Interlambing Period     | 107.7    | 110.2 | 102.8 |
| Selection Indices       |          |       |       |
| Logix Merit Index       | 104.1    | 104.1 | 104.1 |
| Ewe Index               | 108.0    | 109.2 | 105.7 |
| Growth Index            | 96.9     | 97.5  | 95.8  |
| Inbreeding              |          |       |       |
| Inbreeding (%)          | 3.30     | 7.64  | 2.82  |
| Number of Animals       |          |       |       |
| Number of Animals       | 40       | 4     | 36    |

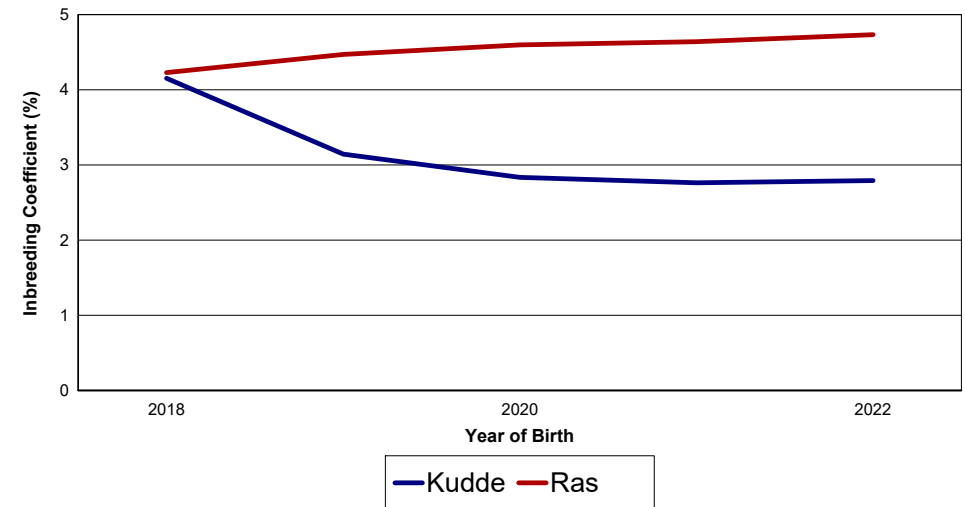
\*\* Averages of all active animals in the flock.

# Inbreeding

Inbreeding primarily leads to decreased fertility and low survivability of lambs. The effects of inbreeding can be observed from 6.25% onwards. It is therefore highly recommended to record pedigree information as accurately and completely as possible and to use a selection programme for selection of unrelated rams.

Incomplete or incorrect pedigree information can be reported to SA Stud Book. Inbreeding is dependent on pedigree information. Conventional methods for the Calculation of inbreeding coefficients usually assume that unknown parents are unrelated. However, this is usually far from the truth. An algorithm is used for the calculation of inbreeding, where the average inbreeding coefficient is assigned to unknown parents based on the generation in which they were born. This result is a more accurate reflection of inbreeding of the herd and breed.

## Average Inbreeding per Year of Birth



## Level and Rate of Inbreeding

| Year of Birth | Level* (%) | Rate (% / year) |
|---------------|------------|-----------------|
| 2018 - 2022   | 2.79       | -0.34           |
| Recommended:  | < 6.25     | < 0.1 - 0.2     |

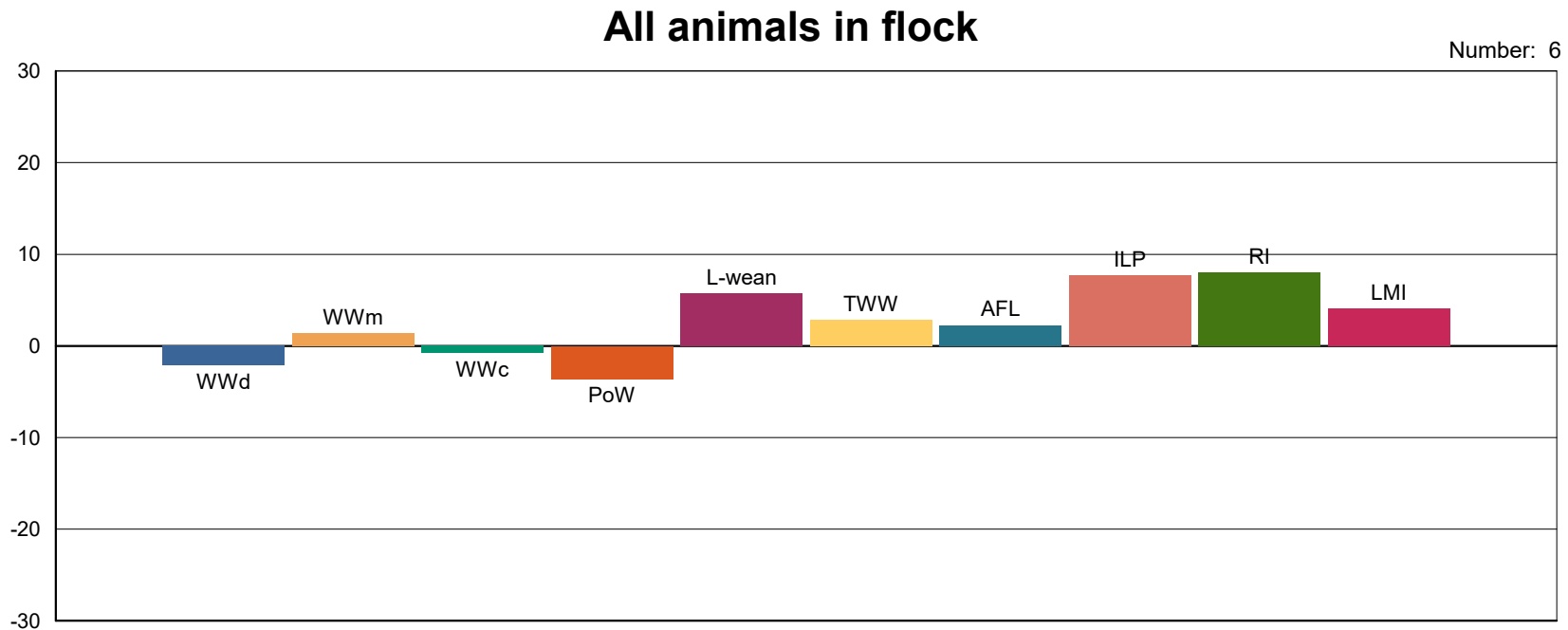
\*Of the last year of birth

## Pedigree Information

|             | Number | %  |
|-------------|--------|----|
| Known Sires | 6      | 15 |
| Known Dams  | 6      | 15 |

Note: Inbreeding can be under-estimated if pedigree information is incomplete or incorrect

# Genetic Windows



**WWd:** Weaning Weight Direct  
**WWm:** Weaning Weight Maternal  
**WWc:** Weaning Weight Combined  
**PoW:** Post-Wean Weight  
**L-wean:** Number of Lambs Weaned  
**TWW:** Total Weight Weaned  
**AFL:** Age at First Lambing  
**ILP:** Inter-lambing Period  
**RI:** Reproduction Index  
**LMI:** Logix Merit Index

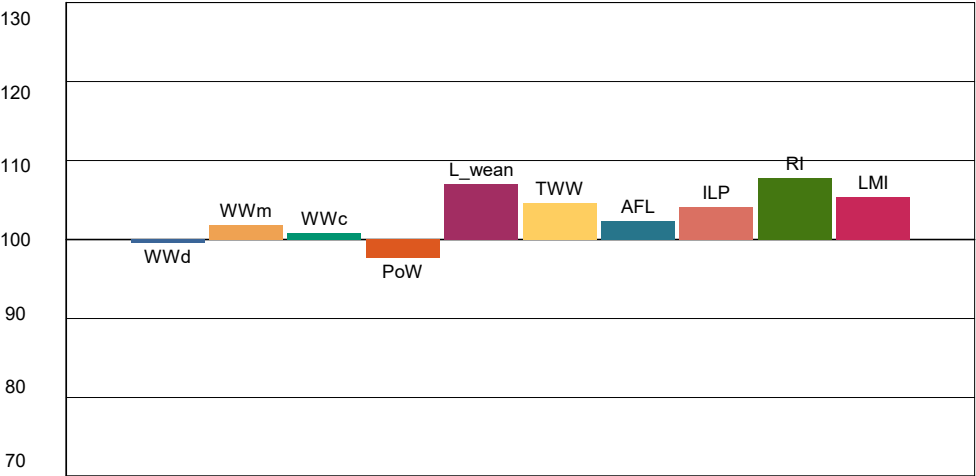
The genetic windows allow a quick overview of the genetic status of the flock compared to the breed. The values presented here are the average EBV indices of all the active animals of the flock, of the dams and sires of the active animals of the flock, as well as of the ewes and rams that are younger than 2-years old. An index of 100 is equal to the average of the active measured population. Due to the higher selection intensity on rams (selection is more strict since a much smaller percentage of young animals are retained in the flock), the expectation is for the average index of the sires to be higher than that of the dams.

Remember that the EBV index for AFL and ILP are presented in such a way that an index above 100 indicates animals that have a lower EBV for these traits.

# Genetic Windows

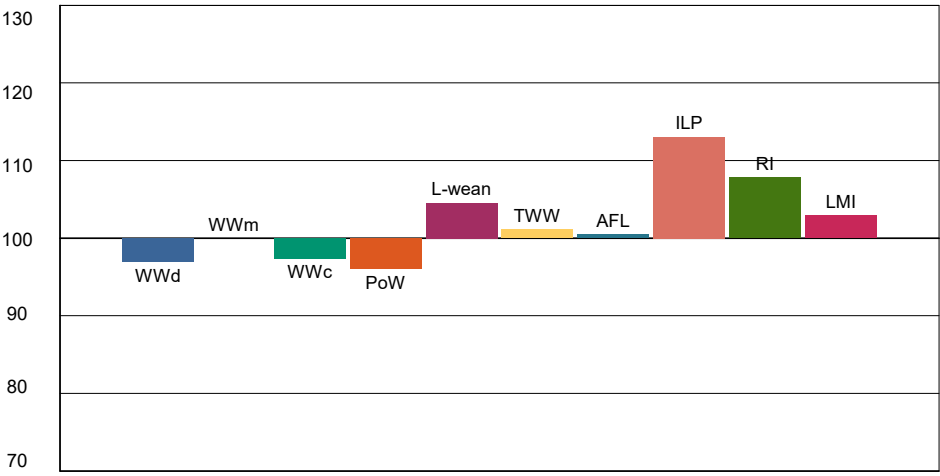
Dams

Number: 5



Sires

Number: 6

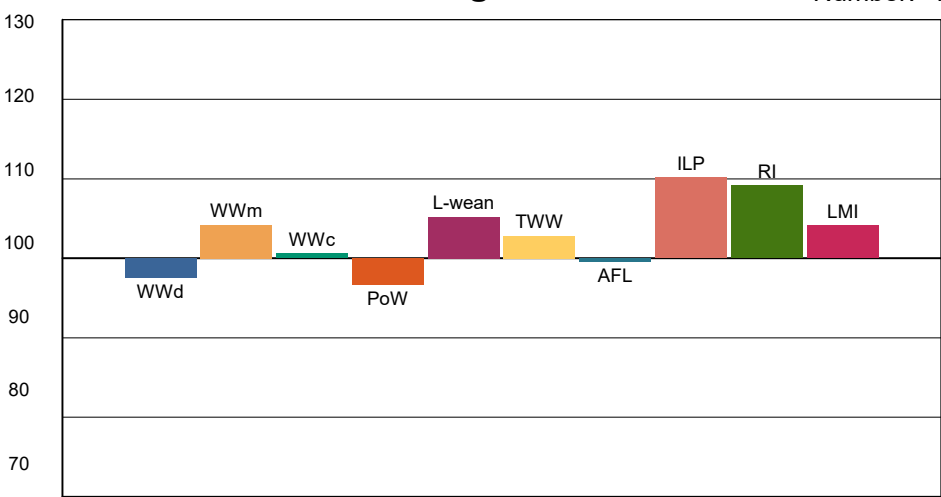


Number:

Young Rams

Number: 4

130  
120  
110  
100  
90  
80  
70



# Genetic Trends

Genetic trends are based on measured animals that were bred by the specific breeder.

# Genetic Trends

Genetic trends are based on measured animals that were bred by the specific breeder.

For AFL and ILP flock genetic trends below breed averages are desirable.

## Genetic Trends of Breed

| Birth year | Weaning Weight<br>EBV |       |       |       | Post-wean |       | Lambs Weaned |       | TWW    |     | AFL    |       | ILP    |       | RI     |     | LMI    |     |
|------------|-----------------------|-------|-------|-------|-----------|-------|--------------|-------|--------|-----|--------|-------|--------|-------|--------|-----|--------|-----|
|            | Number                | Dir   | Mat   | Comb  | Number    | EBV   | Number       | EBV   | Number | EBV | Number | EBV   | Number | EBV   | Number | EBV | Number | EBV |
| 2012       | 1431                  | -0.30 | 0.04  | -0.12 | 108       | 0.17  | 470          | -0.17 | 1431   | 100 | 1140   | -1.66 | 663    | 0.17  | 1431   | 102 | 1431   | 100 |
| 2013       | 1336                  | -0.34 | 0.01  | -0.16 | 108       | 0.30  | 507          | -0.23 | 1336   | 98  | 1070   | -1.82 | 650    | 0.79  | 1336   | 100 | 1336   | 98  |
| 2014       | 1007                  | -0.34 | -0.08 | -0.25 | 58        | -0.16 | 676          | -0.29 | 1007   | 97  | 1061   | -0.65 | 656    | 0.66  | 1007   | 97  | 1007   | 96  |
| 2015       | 1626                  | -0.17 | 0.05  | -0.03 | 233       | 0.84  | 711          | 0.22  | 1626   | 101 | 1158   | -1.30 | 704    | 0.26  | 1626   | 103 | 1626   | 101 |
| 2016       | 1804                  | -0.23 | 0.02  | -0.09 | 239       | 0.52  | 794          | -0.25 | 1804   | 99  | 1270   | -0.91 | 868    | -0.07 | 1804   | 101 | 1804   | 99  |
| 2017       | 2163                  | -0.29 | -0.01 | -0.16 | 313       | 0.89  | 823          | 0.11  | 2120   | 98  | 1362   | -0.69 | 952    | -0.04 | 2120   | 101 | 2120   | 99  |
| 2018       | 2547                  | -0.28 | 0.06  | -0.08 | 236       | 0.37  | 865          | 0.08  | 2519   | 99  | 1773   | 0.56  | 1199   | -0.93 | 2519   | 102 | 2519   | 100 |
| 2019       | 2144                  | 0.00  | 0.00  | 0.00  | 254       | 0.00  | 795          | -0.01 | 2138   | 101 | 2013   | 0.00  | 1253   | 0.00  | 2138   | 101 | 2138   | 101 |
| 2020       | 2459                  | -0.08 | -0.02 | -0.06 | 436       | -0.77 | 716          | 0.31  | 2459   | 101 | 2552   | 0.57  | 1342   | -0.29 | 2459   | 102 | 2459   | 101 |
| 2021       | 1738                  | -0.02 | -0.14 | -0.15 | 330       | -0.18 | 583          | 0.20  | 1738   | 102 | 2445   | 0.83  | 932    | -0.18 | 1738   | 101 | 1738   | 102 |
| 2022       | 2514                  | -0.12 | -0.08 | -0.14 | 427       | 0.12  | 330          | 0.07  | 2514   | 101 | 1664   | 0.24  | 212    | 0.18  | 2514   | 102 | 2514   | 101 |
| 2023       | 2843                  | -0.20 | -0.09 | -0.19 | 457       | 0.09  | 10           | 0.66  | 2839   | 100 | 252    | 0.75  |        |       | 2839   | 100 | 2839   | 100 |

## Genetic Trends of Flock

| Birth year | Weaning Weight<br>EBV |     |     |      | Post-Wean |     | Lambs Weaned |     | TWW    |     | AFL    |     | ILP    |     | RI     |     | LMI    |     |
|------------|-----------------------|-----|-----|------|-----------|-----|--------------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|
|            | Number                | Dir | Mat | Comb | Number    | EBV | Number       | EBV | Number | EBV | Number | EBV | Number | EBV | Number | EBV | Number | EBV |
|            |                       |     |     |      |           |     |              |     |        |     |        |     |        |     |        |     |        |     |

# Breeding Value & Selection Index Percentiles

The percentiles indicate the ranking of the animals' EBVs and Selection Indices within the active population.

For example, if an animal's EBV for a specific trait falls between the maximum and 99% percentile of the trait, it means that this animal ranks in the top 1% of the active population, or this animal's genetic merit for the trait is better than 99% of that of the active population.

Should the EBV for a specific trait falls between the 5% and 10% percentile, it means that the animal ranks in the bottom 10% of the active population for the specific trait, or the animal's genetic merit is worse than 90% of the active population.

Note that the percentiles for Age at First Lambing and Inter-lambing Period EBVs work on the reverse scale.

## All Active Animals

| Trait                   | AVG   | SA*   | Min   | Percentiles (%) |       |       |       |       |       |       |       |       |       |       |       |       |       |        | Max    |
|-------------------------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
|                         |       |       |       | 1               | 5     | 10    | 20    | 25    | 30    | 40    | 50    | 60    | 70    | 75    | 80    | 90    | 95    | 99     |        |
| Weaning Weight Direct   | -0.24 | 0.71  | -3.80 | -1.86           | -1.19 | -0.92 | -0.71 | -0.67 | -0.64 | -0.48 | -0.35 | -0.20 | -0.02 | 0.10  | 0.24  | 0.65  | 1.07  | 1.99   | 5.66   |
| Weaning Weight Maternal | -0.08 | 0.30  | -2.07 | -0.89           | -0.58 | -0.45 | -0.29 | -0.23 | -0.19 | -0.11 | -0.05 | 0.00  | 0.06  | 0.07  | 0.11  | 0.23  | 0.37  | 0.75   | 2.20   |
| Weaning Weight Combined | -0.20 | 0.42  | -2.50 | -1.34           | -0.86 | -0.64 | -0.45 | -0.39 | -0.35 | -0.27 | -0.23 | -0.17 | -0.07 | -0.01 | 0.06  | 0.27  | 0.51  | 1.16   | 3.06   |
| Post-Wean Weight        | -0.09 | 1.12  | -6.98 | -2.65           | -1.46 | -1.12 | -0.91 | -0.84 | -0.74 | -0.51 | -0.27 | 0.01  | 0.30  | 0.48  | 0.70  | 1.33  | 1.96  | 3.29   | 7.90   |
| Number of Lambs Weaned  | -0.19 | 1.51  | -8.70 | -4.30           | -2.90 | -2.20 | -1.40 | -1.10 | -0.80 | -0.30 | 0.10  | 0.50  | 0.70  | 0.90  | 0.90  | 1.10  | 1.80  | 3.60   | 8.80   |
| Total Weight Weaned     | -0.43 | 1.22  | -6.78 | -3.57           | -2.49 | -1.93 | -1.30 | -1.07 | -0.87 | -0.56 | -0.32 | -0.11 | 0.03  | 0.14  | 0.30  | 0.78  | 1.36  | 3.26   | 7.76   |
| Age at First Lambing    | 0.40  | -6.45 | 63.73 | 18.03           | 10.39 | 7.45  | 4.46  | 3.42  | 2.50  | 1.16  | 0.09  | -0.63 | -1.76 | -2.44 | -3.26 | -5.98 | -8.98 | -19.65 | -74.30 |
| Interlambing Period     | -0.15 | -3.36 | 23.29 | 9.18            | 5.24  | 3.67  | 2.17  | 1.70  | 1.23  | 0.47  | -0.12 | -0.73 | -1.55 | -2.01 | -2.57 | -4.11 | -5.58 | -8.91  | -21.84 |
| Reproduction Index      | 100   | 9     | 48    | 75              | 84    | 89    | 93    | 95    | 97    | 100   | 102   | 104   | 105   | 106   | 107   | 109   | 112   | 120    | 150    |
| Logix Merit Index       | 99    | 8     | 63    | 80              | 86    | 90    | 94    | 95    | 96    | 98    | 100   | 101   | 102   | 103   | 104   | 107   | 110   | 122    | 143    |

\*SD : Standard Deviation. An indicator of how far breeding values/selection indices are distributed around the average.

# Breeding Value & Selection Index Percentiles

## All Active Rams

| Trait                   | AVG   | SA*   | Min   | Percentiles (%) |       |       |       |       |       |       |       |       |       |       |       |       |       |        | Max    |
|-------------------------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
|                         |       |       |       | 1               | 5     | 10    | 20    | 25    | 30    | 40    | 50    | 60    | 70    | 75    | 80    | 90    | 95    | 99     |        |
| Weaning Weight Direct   | -0.19 | 0.74  | -3.80 | -1.94           | -1.18 | -0.89 | -0.68 | -0.66 | -0.58 | -0.43 | -0.30 | -0.16 | 0.03  | 0.17  | 0.30  | 0.73  | 1.14  | 2.15   | 5.66   |
| Weaning Weight Maternal | -0.10 | 0.27  | -1.78 | -0.85           | -0.57 | -0.44 | -0.30 | -0.24 | -0.20 | -0.13 | -0.07 | -0.02 | 0.04  | 0.07  | 0.09  | 0.19  | 0.31  | 0.56   | 1.21   |
| Weaning Weight Combined | -0.19 | 0.40  | -1.80 | -1.26           | -0.83 | -0.62 | -0.43 | -0.38 | -0.34 | -0.27 | -0.23 | -0.16 | -0.07 | -0.01 | 0.07  | 0.26  | 0.47  | 1.09   | 3.06   |
| Post-Wean Weight        | -0.01 | 1.12  | -6.76 | -2.51           | -1.38 | -1.07 | -0.88 | -0.77 | -0.64 | -0.41 | -0.18 | 0.10  | 0.39  | 0.58  | 0.80  | 1.43  | 2.02  | 3.36   | 7.90   |
| Number of Lambs Weaned  | -0.31 | 1.47  | -6.50 | -4.20           | -2.90 | -2.30 | -1.50 | -1.20 | -0.90 | -0.50 | -0.10 | 0.30  | 0.60  | 0.70  | 0.90  | 1.00  | 1.60  | 3.30   | 7.50   |
| Total Weight Weaned     | -0.47 | 1.23  | -5.02 | -3.48           | -2.53 | -2.00 | -1.39 | -1.13 | -0.96 | -0.61 | -0.37 | -0.14 | 0.00  | 0.12  | 0.26  | 0.74  | 1.31  | 3.41   | 7.76   |
| Age at First Lambing    | 0.44  | -5.80 | 27.83 | 15.42           | 9.73  | 7.25  | 4.35  | 3.40  | 2.49  | 1.25  | 0.23  | -0.55 | -1.65 | -2.21 | -2.98 | -5.46 | -8.02 | -18.64 | -51.57 |
| Interlambing Period     | -0.14 | -2.99 | 19.06 | 8.14            | 4.72  | 3.32  | 2.02  | 1.54  | 1.09  | 0.41  | -0.12 | -0.65 | -1.44 | -1.90 | -2.36 | -3.80 | -5.11 | -7.40  | -19.06 |
| Reproduction Index      | 100   | 8     | 51    | 76              | 84    | 88    | 93    | 95    | 96    | 99    | 101   | 103   | 105   | 106   | 107   | 108   | 111   | 118    | 132    |
| Logix Merit Index       | 99    | 8     | 67    | 80              | 86    | 89    | 93    | 95    | 96    | 98    | 100   | 101   | 102   | 103   | 104   | 107   | 110   | 124    | 143    |

## All Active Ewes

| Trait                   | AVG   | SA*   | Min   | Percentiles (%) |       |       |       |       |       |       |       |       |       |       |       |       |       |        | Max    |
|-------------------------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
|                         |       |       |       | 1               | 5     | 10    | 20    | 25    | 30    | 40    | 50    | 60    | 70    | 75    | 80    | 90    | 95    | 99     |        |
| Weaning Weight Direct   | -0.26 | 0.70  | -3.41 | -1.83           | -1.19 | -0.92 | -0.73 | -0.67 | -0.66 | -0.51 | -0.37 | -0.23 | -0.04 | 0.07  | 0.21  | 0.61  | 1.04  | 1.91   | 4.34   |
| Weaning Weight Direct   | -0.07 | 0.31  | -2.07 | -0.93           | -0.59 | -0.45 | -0.29 | -0.23 | -0.18 | -0.11 | -0.04 | 0.01  | 0.07  | 0.08  | 0.12  | 0.25  | 0.41  | 0.82   | 2.20   |
| Weaning Weight Combined | -0.20 | 0.43  | -2.50 | -1.37           | -0.87 | -0.65 | -0.46 | -0.40 | -0.35 | -0.27 | -0.24 | -0.17 | -0.07 | -0.01 | 0.06  | 0.27  | 0.52  | 1.18   | 2.49   |
| Post-Wean Weight        | -0.13 | 1.11  | -6.98 | -2.68           | -1.49 | -1.15 | -0.91 | -0.88 | -0.79 | -0.55 | -0.32 | -0.03 | 0.26  | 0.43  | 0.65  | 1.27  | 1.92  | 3.28   | 7.84   |
| Number of Lambs Weaned  | -0.13 | 1.53  | -8.70 | -4.40           | -2.90 | -2.20 | -1.30 | -1.00 | -0.70 | -0.20 | 0.20  | 0.50  | 0.80  | 0.90  | 0.90  | 1.10  | 1.80  | 3.70   | 8.80   |
| Total Weight Weaned     | -0.41 | 1.22  | -6.78 | -3.61           | -2.47 | -1.87 | -1.26 | -1.05 | -0.84 | -0.54 | -0.29 | -0.09 | 0.04  | 0.15  | 0.31  | 0.81  | 1.39  | 3.21   | 6.88   |
| Age at First Lambing    | 0.38  | -6.73 | 63.73 | 19.15           | 10.76 | 7.54  | 4.48  | 3.43  | 2.51  | 1.12  | 0.02  | -0.69 | -1.81 | -2.54 | -3.37 | -6.18 | -9.43 | -20.14 | -74.30 |
| Interlambing Period     | -0.15 | -3.53 | 23.29 | 9.58            | 5.51  | 3.87  | 2.26  | 1.78  | 1.31  | 0.50  | -0.12 | -0.76 | -1.61 | -2.07 | -2.65 | -4.28 | -5.84 | -9.44  | -21.84 |
| Reproduction Index      | 101   | 9     | 48    | 75              | 84    | 89    | 94    | 96    | 97    | 100   | 102   | 104   | 106   | 106   | 107   | 109   | 113   | 121    | 150    |
| Logix Merit Index       | 99    | 8     | 63    | 79              | 86    | 90    | 94    | 95    | 97    | 98    | 100   | 101   | 102   | 103   | 104   | 107   | 110   | 122    | 143    |

\*SD : Standard Deviation. An indicator of how far breeding values/selection indices are distributed around the average.

# Rams

Inbreeding in red is high

EBV - Estimated Breeding Value

Indices >=124  
Above breed average  
Indices <= 76

Acc: Accuracy of the breeding value  
EBVs with an accuracy below 5% are not printed

Index: Expresses the EBV around 100 where 100 is set as the average EBV of active animals

| Animal Information             |          |      |         |    |      | Selection Indices |                   | EBV - Weights |             |       |           | EBV - Fertility |           |           |           |           |           |           |           |           |     |            |     |
|--------------------------------|----------|------|---------|----|------|-------------------|-------------------|---------------|-------------|-------|-----------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----|------------|-----|
| Animal ID<br>Comp no.          |          |      | Parents |    |      | % In-breeding     | Logix Merit Index | Reproducti on | Wean Weight |       | Post-Wean | Number Weaned   |           | TWW       |           | AFL       |           | ILP       |           | Dam       |     |            |     |
|                                |          |      |         |    |      |                   |                   |               | Dir         | Mat   |           | Comb            | EBV Index | EBV Index | EBV Index | EBV Index | EBV Index | EBV Index | EBV Index | EBV Index | EPI | Times Lame |     |
| Active Breed Average:          |          |      |         |    |      | 100               | 100               | -0.24         | -0.08       | -0.20 | -0.09     | -0.19           | -0.43     | 0.40      | -0.14     |           |           |           |           |           |     |            |     |
| 1298                           | 18       | 0397 | 762     | 16 | 0351 | 8.27              | 107               | 114           | -0.60       | 0.27  | -0.03     | 0.13            | 1.30      | 0.45      | -2.75     | -1.96     | 5         |           |           |           |     |            |     |
|                                | 86473451 |      | 1168    | 08 | 0153 |                   |                   |               | 43          | 95    | 38        | 110             | 102       | 20        | 100       | 23        | 108       | 36        | 104       | 52        | 104 | 29         | 106 |
| 1484                           | 19       | 0021 | 1484    | 18 | 0018 | 14.67             | 108               | 108           | 0.43        | -0.07 | 0.14      | 0.75            | 1.00      | 0.95      | -0.67     | -3.17     | 6         |           |           |           |     |            |     |
|                                | 86545639 |      | 1484    | 17 | 0019 |                   |                   |               | 20          | 105   | 19        | 101             | 105       | 12        | 104       | 8         | 107       | 17        | 107       | 37        | 101 | 23         | 110 |
| 959                            | 19       | 0024 | 762     | 14 | 0450 | 1.54              | 93                | 105           | -1.34       | 0.16  | -0.51     | -2.57           | -0.30     | -1.36     | 4.76      | -3.45     | 5         |           |           |           |     |            |     |
|                                | 84609684 |      | 959     | 12 | 0610 |                   |                   |               | 45          | 87    | 41        | 107             | 94        | 32        | 81        | 27        | 99        | 39        | 94        | 40        | 94  | 28         | 110 |
| 776                            | 19       | 0115 | 776     | 17 | 0045 | 6.05              | 108               | 109           | 0.28        | -0.13 | 0.01      | 0.58            | 1.00      | 0.74      | -0.12     | -5.03     | 1         |           |           |           |     |            |     |
|                                | 85815462 |      | 776     | 17 | 0044 |                   |                   |               | 44          | 104   | 37        | 99              | 102       | 20        | 103       | 16        | 107       | 35        | 106       | 48        | 100 | 28         | 115 |
| Ram Flock Average:             |          |      |         |    |      | 104               | 109               | -0.31         | 0.06        | -0.10 | -0.28     | 0.75            | 0.20      | 0.31      | -3.40     |           |           |           |           |           |     |            |     |
| Number of rams in the flock: 4 |          |      |         |    |      |                   |                   |               |             |       |           |                 |           |           |           |           |           |           |           |           |     |            |     |

# Ewes

Inbreeding in red is high

EBV - Estimated Breeding Value

Indices  $\geq 124$   
Above breed average  
Indices  $\leq 76$

Acc: Accuracy of the breeding value  
EBVs with an accuracy below 5% are not printed

Index: Expresses the EBV around 100 where 100 is set as the average EBV of active animals

| Animal Information       |                                              |           |     | Selection Indices |                         | EBV - Weights              |                |             |                | EBV - Fertility |                  |                  |                 |     |     |                |
|--------------------------|----------------------------------------------|-----------|-----|-------------------|-------------------------|----------------------------|----------------|-------------|----------------|-----------------|------------------|------------------|-----------------|-----|-----|----------------|
| Animal<br>Comp no.       |                                              |           |     | % In-<br>breeding | Logix<br>Merit<br>Index | Repro-<br>duction<br>Index | Wean Weight    |             | Post-Wean      |                 | Number<br>Weaned | TWW              | AFL             | ILP | EPI | Times<br>Lambd |
|                          |                                              |           |     |                   |                         |                            | Dir            | Mat         | Comb           |                 |                  |                  |                 |     |     |                |
|                          | Acc                                          | EBV Index | Acc |                   |                         |                            | EBV Index      | EBV Index   | Acc            | EBV Index       |                  |                  |                 |     |     |                |
| Active Breed Average:    |                                              |           |     | 100               | 100                     | -0.24                      | -0.08          | -0.20       | -0.09          | -0.19           | -0.43            | 0.40             | -0.14           |     |     |                |
| 776 18 0093<br>82354036  | 776 16 0034<br>776 WA 0015                   | 2.55      |     | 101               | 104                     | -0.38<br>32 97             | -0.54<br>31 88 | -0.73<br>90 | -0.94<br>20 92 | 1.20<br>9 108   | -0.20<br>26 101  | -0.41<br>53 101  | -5.54<br>28 116 | 4   |     |                |
| 1088 19 0011<br>86214962 | 1484 17 0003<br>1088 17 0012                 | 1.56      |     | 107               | 108                     | -0.04<br>19 100            | 0.06<br>20 104 | 0.04<br>103 | 0.07<br>10 99  | 0.90<br>7 106   | 0.56<br>17 105   | -11.22<br>53 115 | 3.85<br>24 89   | 2   |     |                |
|                          | Ewe flock average:<br>Total ewes in flock: 2 |           |     | 104               | 106                     | -0.21                      | -0.24          | -0.35       | -0.43          | 1.05            | 0.18             | -5.82            | -0.85           |     |     |                |



# Sires Used in Flock

\*Inbreeding in red is high

EBV - Estimated Breeding Value

Indices >=124  
Above breed average  
Indices <= 76

Acc: Accuracy of the breeding value  
EBVs with an accuracy below 5% are not printed

Index: Expresses the EBV around 100 where 100 is set as the average EBV of active animals

| Animal Information       |                          | Parents & Progeny |                                      |        |                |        |                   | Selection Indices |                | EBV - Weights  |                 |             |                | EBV - Fertility |                 |                  |                  |      |
|--------------------------|--------------------------|-------------------|--------------------------------------|--------|----------------|--------|-------------------|-------------------|----------------|----------------|-----------------|-------------|----------------|-----------------|-----------------|------------------|------------------|------|
| Animal ID<br>Computer nr | % In-breeding            | Sire ID<br>Dam ID | 1st Generation                       |        | 2nd Generation |        | Logix Merit Index | Reprod Index      | Weaning Weight |                | Comb            | Post-Wean   | Number Weaned  | TWW             | AFL             | ILP              | Dam              |      |
|                          |                          |                   | Progeny                              | Number | Progeny        | Number |                   |                   | Dir            | Mat            |                 |             |                |                 |                 |                  |                  | EBV  |
|                          |                          |                   | y                                    | Herds  | Weaned         | Herds  |                   |                   | Acc            | Index          | Acc             | Index       | Acc            | Index           | Acc             | Index            |                  | Acc  |
| Active Breed Average:    |                          |                   |                                      |        |                |        | 100               | 100               | -0.24          | -0.08          | -0.20           | -0.09       | -0.19          | -0.43           | 0.40            | -0.14            |                  |      |
| 1                        | 762 14 0450<br>74915265  | 7.25              | 762 12 0290<br>LM 07 0321            | 64     | 3              | 27     | 4                 | 85                | 104            | -2.01<br>91 80 | 0.25<br>82 110  | -0.76<br>89 | -4.23<br>64 70 | -1.60<br>53 92  | -2.72<br>79 85  | 9.80<br>80 87    | -6.79<br>55 120  | 7    |
| 2                        | 776 16 0034<br>78612744  | 2.12              | 776 HC 0125<br>776 HS 0010           |        |                | 2      | 1                 | 101               | 103            | -0.27<br>44 98 | -0.78<br>45 81  | -0.91<br>87 | -0.13<br>24 98 | 0.90<br>12 106  | -0.51<br>37 99  | 5.31<br>71 93    | -11.76<br>42 134 | 4    |
| 3                        | 762 16 0351<br>79104378  | 6.90              | 762 12 0564<br>762 14 0576           | 16     | 1              | 12     | 1                 | 111               | 120            | -0.48<br>82 96 | 0.33<br>72 112  | 0.08<br>104 | 0.63<br>39 103 | 2.00<br>44 112  | 1.04<br>69 108  | 1.56<br>76 98    | -6.33<br>52 119  | 92 2 |
| 4                        | 1484 17 0003<br>80946825 | 1.38              | 776 14 0184<br>1484 10 0004          |        |                | 3      | 1                 | 109               | 106            | 0.43<br>35 105 | -0.07<br>37 101 | 0.15<br>105 | 0.75<br>18 104 | 1.00<br>12 107  | 0.97<br>30 108  | -10.16<br>77 114 | 3.06<br>41 92    | 2    |
| 5                        | 776 17 0045<br>80429251  | 3.16              | 776 15 0303<br>776 MW0053            | 15     | 2              | 12     | 1                 | 102               | 106            | -0.33<br>82 97 | -0.23<br>68 96  | -0.40<br>95 | -0.03<br>36 98 | 0.50<br>29 104  | -0.27<br>64 100 | 0.19<br>80 100   | -5.13<br>49 115  | 7    |
| 6                        | 1484 18 0018<br>81808925 | 2.91              | 776 14 0184<br>1484 15 0028          |        |                |        |                   | 110               | 109            | 0.43<br>28 105 | -0.07<br>27 101 | 0.14<br>105 | 0.75<br>18 104 | 1.00<br>12 107  | 0.95<br>24 107  | -9.32<br>54 112  | 0.51<br>34 99    | 3    |
| Sire Flock Average:      |                          |                   | Number of sires used in the flock: 6 |        |                |        |                   | 103               | 108            | -0.37          | -0.10           | -0.28       | -0.38          | 0.63            | -0.09           | -0.44            | -4.41            |      |

# Ram Selection List: LMI

Animals sorted on LMI

Inbreeding in red is high

EBV - Estimated Breeding Value

Indices >=124

Above breed average

Indices <= 76

Acc: Accuracy of the breeding value  
EBVs with an accuracy below 5% are not printed

Index: Expresses the EBV around 100 where 100 is set as the average EBV of active animals

| Animal Information       |                          | Parents & Progeny |                            |                | Selection Indices |                    | EBV - Weights  |                 |               |                | EBV - Fertility |                |                 |                 |               |     |
|--------------------------|--------------------------|-------------------|----------------------------|----------------|-------------------|--------------------|----------------|-----------------|---------------|----------------|-----------------|----------------|-----------------|-----------------|---------------|-----|
| Animal ID<br>Computer nr | % In-breeding            | Sire ID<br>Dam ID | 1st Generation             | 2nd Generation | Logix Merit Index | Reproduction Index | Weaning Weight |                 | Post-Wean     | Number Weaned  | TWW             | AFL            | ILP             | Dam             |               |     |
|                          |                          |                   | Progeny Number             | Progeny Number |                   |                    | Dir            | Mat             |               |                |                 |                |                 |                 | Comb          |     |
|                          |                          |                   | Weaned                     | Herds          |                   |                    | Weaned         | Herds           | EBV Acc Index | EBV Acc Index  | EBV Index       | EBV Acc Index  | EBV Acc Index   | EBV Acc Index   | EBV Acc Index | EPI |
|                          |                          |                   | Active Breed Average:      |                | 100               | 100                | -0.24          | -0.08           | -0.20         | -0.09          | -0.19           | -0.43          | 0.40            | -0.14           |               |     |
| 1                        | 1484 19 0021<br>86545639 | 14.67             | 484 18 0018<br>484 17 0019 |                | 108               | 108                | 0.43<br>20 105 | -0.07<br>19 101 | 0.14<br>105   | 0.75<br>12 104 | 1.00<br>8 107   | 0.95<br>17 107 | -0.67<br>37 101 | -3.17<br>23 110 | 6             |     |
| 2                        | 776 19 0115<br>85815462  | 6.05              | 776 17 0045<br>776 17 0044 |                | 108               | 109                | 0.28<br>44 104 | -0.13<br>37 99  | 0.01<br>102   | 0.58<br>20 103 | 1.00<br>16 107  | 0.74<br>35 106 | -0.12<br>48 100 | -5.03<br>28 115 | 1             |     |
| 3                        | 1298 18 0397<br>86473451 | 8.27              | 762 16 0351<br>168 08 0153 |                | 107               | 114                | -0.60<br>43 95 | 0.27<br>38 110  | -0.03<br>102  | 0.13<br>20 100 | 1.30<br>23 108  | 0.45<br>36 104 | -2.75<br>52 104 | -1.96<br>29 106 | 5             |     |
| 4                        | 959 19 0024<br>84609684  | 1.54              | 762 14 0450<br>959 12 0610 |                | 93                | 105                | -1.34<br>45 87 | 0.16<br>41 107  | -0.51<br>94   | -2.57<br>32 81 | -0.30<br>27 99  | -1.36<br>39 94 | 4.76<br>40 94   | -3.45<br>28 110 | 5             |     |

# Ewe Selection List: LMI

Animals sorted on LMI

Inbreeding in red is high

EBV - Estimated Breeding Value

Indices >=124  
Above breed average  
Indices <= 76

Acc: Accuracy of the breeding value  
EBVs with an accuracy below 5% are not printed

Index: Expresses the EBV around 100 where 100 is set as the average EBV of active animals

| Animal Information       |                          | Parents           | Selection Indices            |                            | EBV - Weights  |             |             |             | EBV - Fertility  |           |             |              |             |                |
|--------------------------|--------------------------|-------------------|------------------------------|----------------------------|----------------|-------------|-------------|-------------|------------------|-----------|-------------|--------------|-------------|----------------|
| Animal ID<br>Computer nr | % In-breeding            | Sire ID<br>Dam ID | Logix<br>Merit<br>Index      | Repro-<br>duction<br>Index | Weaning Weight |             | Post-Wean   |             | Number<br>Weaned | TWW       | AFL         | ILP          | EPI         | Times<br>Lambd |
|                          |                          |                   |                              |                            | Dir            | Mat         | Comb        |             |                  |           |             |              |             |                |
|                          |                          |                   |                              |                            | Acc            | Index       | Acc         | Index       | EBV              | Index     | EBV         | Index        | Acc         | Index          |
| Active Breed Average:    |                          |                   | 100                          | 100                        | -0.24          | -0.08       | -0.20       | -0.09       | -0.19            | -0.43     | 0.40        | -0.14        |             |                |
| 1                        | 1088 19 0011<br>86214962 | 1.56              | 1484 17 0003<br>1088 17 0012 | 107                        | 108            | -0.04<br>19 | 0.06<br>100 | 0.04<br>103 | 0.07<br>10       | 0.90<br>7 | 0.56<br>17  | -11.22<br>53 | 3.85<br>24  | 2              |
| 2                        | 776 18 0093<br>82354036  | 2.55              | 776 16 0034<br>776 WA0015    | 101                        | 104            | -0.38<br>32 | -0.54<br>31 | -0.73<br>90 | -0.94<br>20      | 1.20<br>9 | -0.20<br>26 | -0.41<br>53  | -5.54<br>28 | 4              |