



DORPER GENETIC REPORT

21 September 2026



CALICO ROCK FARM

FDM : 9032



**CERTIFICATE
OF QUALITY**

Valid up to
October 2029

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 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.

Three Indices are constructed for the Dorper breed, namely the Dorper Logix Merit Index (DLMI), the Dorper Growth Index (DGI) and the Dorper Reproduction Index (DRI). These indices, their purpose and the contribution of the different traits to the indices are summarised as follows :

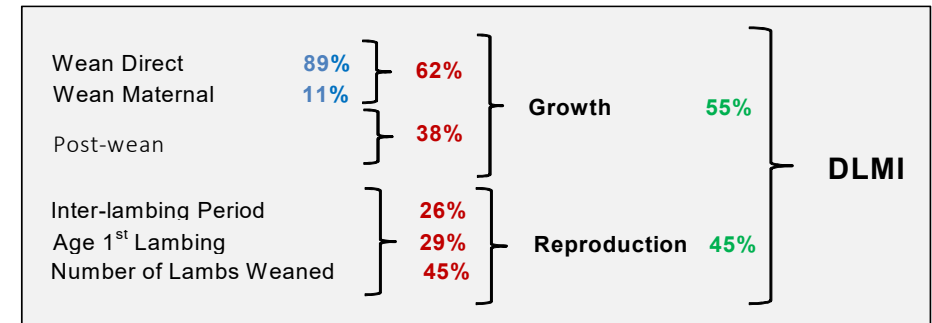
Dorper Logix Merit Index (DLMI)

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 DLMI 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 DLMI is constructed as follows :

$$DLMI = (0.30 * Wean Dir) + (0.04 * Post-Wean) + (0.21 * Wean Mat) + (0.12 * ILP) + (0.13 * AFL) + (0.20 * NLS)$$

Schematically the DLMI can be explained as follows :



Dorper Growth Index (DGI)

Breeding values for Direct and Maternal Weaning Weight, as well as Post-weaning weight are included in this index. This index can be used to identify animals with good pre-weaning and post-weaning growth potential.

The DGI is constructed as follows :

$$DGI = (0.5518 * Wean Dir) + (0.0682 * Post-Wean) + (0.38 * Wean Mat)$$

Reproduction Index (DRI)

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 DRI is constructed as follows :

$$(0.2 * AFL) + (0.2 * ILP) + (0.2 * Wean Mat) + (0.4 * NLW)$$

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.

Dorper

Average Genetic Levels : EBVs

Trait	Flock **			Breed		
	All	Rams	Ewes	All	Rams	Ewes
Wean Direct	-1.50		-1.50	0.00	0.04	-0.02
Wean Maternal	0.12		0.12	0.14	0.12	0.16
Wean Combined	-0.63		-0.63	0.14	0.13	0.15
Post-Wean	-3.05		-3.05	-0.25	-0.21	-0.27
Number of Lambs Weaned	0.65		0.65	0.10	0.11	0.09
Total Weight Weaned	-0.98		-0.98	0.21	0.22	0.20
Age at First Lambing	-3.65		-3.65	0.27	0.41	0.19
Inter-lambing Period	-2.07		-2.07	1.10	1.20	1.05
Selection Indices						
Dorper Logix Merit Index	97		97	99	99	100
Dorper Growth Index	90		90	100	100	100
Dorper Reproduction Index	107		107	99	99	99
Inteling						
Inbreeding (%)	2.25		2.25	3.50	3.79	3.35
Number of Animals						
Number of animals	10	0	10	35778	12454	23129

** Averages of all active animals in the herd.

Average Genetic Levels : Indices

Trait	Flock **			Breed		
	All	Rams	Ewes	All	Rams	Ewes
Wean Direct	86.5		86.5	100	99.5	99.0
Wean Maternal	100.1		100.1	100	100.1	100.5
Wean Combined	93.7		93.7	100	99.8	99.9
Post-Wean	88.6		88.6	100	100.0	99.8
Number of Lambs Weaned	101.8		101.8	100	98.9	98.8
Total Weight Weaned	94.2		94.2	100	99.3	99.2
Age at First Lambing	110.6		110.6	100	99.6	100.2
Inter-lambing Period	107.1		107.1	100	98.7	99.1
Selection Indices						
Dorper Logix Merit Index	97		97	99	99	100
Dorper Growth Index	90		90	100	100	100
Dorper Reproduction Index	107		107	99	99	99
Inbreeding						
Inbreeding (%)	2.25		2.25	3.50	3.79	3.35
Number of Animals						
Number of animals	10	0	10	35778	12454	23129

** Averages of all active animals in the flock.

ACTIVE ANIMALS

Animals born in the last 24 months and their parents, are defined as the active population, unless cancelled on Logix.

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.

Inbreeding Levels for Specific Matings

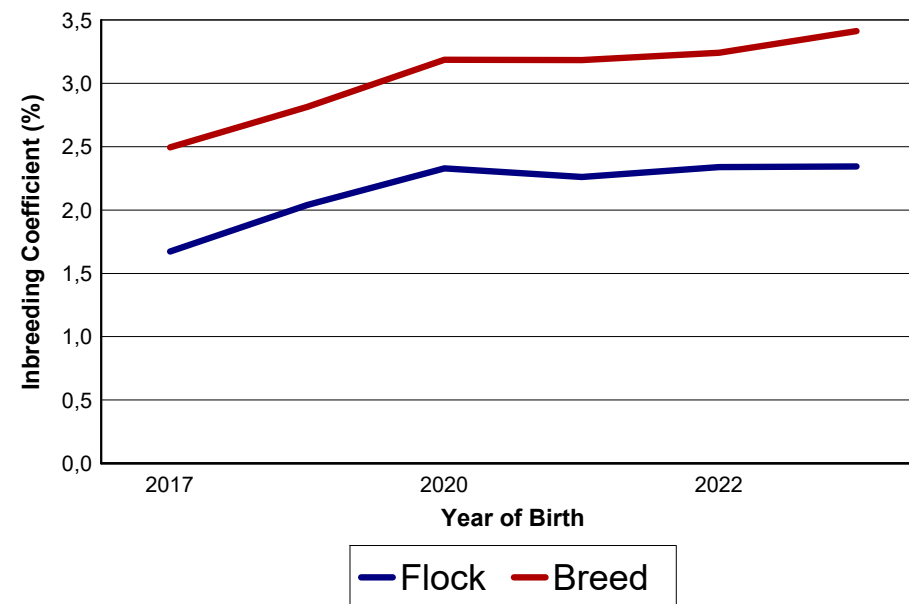
Progeny with Parents :	25%
Full Brother x Full Sister :	25%
Half Brother x Half Sister :	12.5%
One Common Grandparent :	6.25%
One Common Great-Grandparent :	3.125%

Level and Rate of Inbreeding

Year of Birth	Level* (%)	Rate (% / year)
2017 - 2023	2.35	0.11
Recommended:	< 6.25	< 0.1 - 0.2

*Of the last year of birth

Rate of Inbreeding



Pedigree Information

	Nr Animals	% Animals
Known sires		0
Known dams	6	60

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

Genetic Windows

Genetic Linkage of Flock

(Based on the youngest measured generation)

Level	Nr of Link Rams

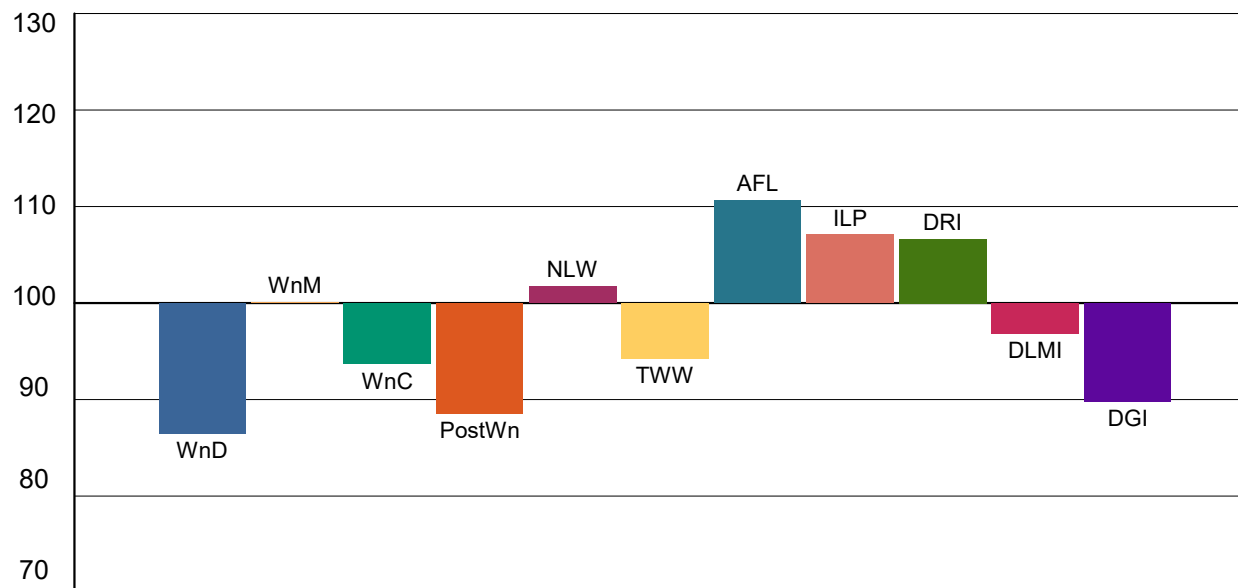
A link ram should have at least 20 measured progeny in your flock and at least another 20 measured progeny in at least one more flock.

Try to use at least 5 link rams in a 5 year period to obtain strong genetic linkage within the breed.

WnD:	Wean Direct
WnM:	Wean Maternal
WnC:	Wean Combined
PostWn:	Post-Wean Weight
NLW:	Number of Lambs Weaned
TWW:	Total Weight Weaned
AFL:	Age at First Lambing
ILP:	Inter-lambing Period
DRI:	Dorper Reproduction Index
DLMI:	Dorper Logix Merit Index
DGI:	Dorper Growth Index

All animals in the flock

Number : 6



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 less than two 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

Number:

130
120
110
100
90
80
70

130
120
110
100
90
80
70

Number:

Number:

130
120
110
100
90
80
70

130
120
110
100
90
80
70

Number:



Genetic Trends

Genetic trends are based on measured animals bred by the relevant breeder

Genetic Trends

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

Genetic Trends of Breed

Birth yr	Weaning Weight EBV			Post-Wean		NLW		TWW		AFL		ILP		DRI	DGI	DLMI
	Number	Dir	Mat	Number	EBV	Number	EBV	Number	EBV	Number	EBV	Number	EBV	Indeks	Indeks	Indeks
2014	10616	-0.75	-0.31	1723	-1.71	2567	0.18	10616	94	1815	2.67	1310	0.09	97.4	92.2	93.3
2015	9178	-0.61	-0.19	2199	-2.07	2380	0.07	9178	95	1770	1.57	1282	0.27	96.9	93.8	94.0
2016	8648	-0.64	-0.18	2168	-2.11	2851	0.05	8648	95	1887	1.08	1361	0.42	98.3	93.7	94.8
2017	9591	-0.43	-0.17	2442	-1.27	2361	0.19	9591	96	2136	1.45	1584	-0.05	98.6	95.1	96.0
2018	8658	-0.42	-0.15	2216	-0.96	2334	0.30	8658	97	1845	1.17	1345	-0.02	99.5	95.3	96.6
2019	8660	-0.25	-0.15	1784	-0.76	1966	0.13	8660	97	1740	-0.12	1314	-0.17	99.8	96.3	97.6
2020	7900	-0.18	-0.07	1820	-0.61	2135	-0.01	7900	98	1738	0.66	1328	-0.33	100.2	97.2	98.4
2021	9083	0.00	0.00	2527	0.00	2732	0.01	9083	99	2313	0.00	1597	0.00	100.4	98.8	99.6
2022	8777	-0.01	0.14	2174	-0.19	2444	0.20	8777	101	1866	0.36	1241	-0.45	102.1	99.4	100.7
2023	7691	0.09	0.12	1828	0.94	1984	0.14	7691	100	1533	-0.35	767	0.33	100.9	100.0	100.5
2024	8002	0.06	0.05	1612	1.09	1162	0.15	8002	100	1115	-0.48	155	0.16	100.0	99.4	99.7
2025	8602	0.02	0.19	1782	1.14	22	-0.19	8602	100	62	1.32	2	-2.08	100.0	99.9	99.9

Genetic Trends of Flock

Birth yr	Weaning Weight EBV			Post-wean		NLW	TWW	AFL	ILP	DRI	DGI	DLMI
	Number	Dir	Mat	Number	EBV	Number	EBV	Number	EBV	Index	Index	Numbe Index

Breeding Values and Selection Indices 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.

Percentile	Wean Dir	Wean Mat	Wean Comb	Post Wean	NLW	TWW	AFL	ILP	DGI	DRI	DLMI
Gemid/Avg	0.01	0.15	0.15	-0.24	0.10	0.21	0.26	1.11	99.67	99.27	99.43
SA/SD	1.34	1.06	1.40	2.83	2.12	2.69	-4.79	-5.11	11.48	11.66	11.77
MIN	-6.40	-4.87	-5.73	-10.91	-9.90	-12.32	104.15	24.50	58.80	51.80	54.90
1%	-2.69	-2.69	-2.72	-6.05	-4.40	-4.76	12.59	15.06	77.20	70.60	77.00
5%	-1.89	-1.69	-1.87	-4.18	-2.80	-3.23	7.35	10.51	84.30	80.40	83.00
10%	-1.50	-1.16	-1.44	-3.37	-2.10	-2.54	5.14	7.78	87.30	84.30	86.40
20%	-1.11	-0.61	-0.90	-2.45	-1.20	-1.78	3.22	4.19	90.90	90.40	90.00
30%	-0.82	-0.28	-0.57	-1.83	-1.20	-1.21	1.96	3.55	93.20	93.30	92.60
40%	-0.50	-0.03	-0.31	-1.19	-0.70	-0.89	0.94	1.89	95.60	96.20	94.80
50%	-0.15	0.17	-0.03	-0.55	-0.20	-0.40	0.35	0.96	97.60	99.30	97.40
60%	0.18	0.36	0.25	0.02	0.20	0.21	-0.70	-0.32	100.30	101.60	100.30
70%	0.59	0.58	0.62	0.80	0.80	0.96	-1.27	-1.60	103.50	104.90	103.80
80%	1.09	0.92	1.14	1.86	1.60	2.04	-2.58	-2.95	107.90	108.70	108.70
90%	1.83	1.46	2.04	3.51	2.90	4.10	-4.62	-4.91	115.30	114.20	116.20
95%	2.49	1.93	2.90	5.09	4.10	5.80	-6.92	-6.70	122.70	119.10	122.60
99%	3.68	2.69	4.18	8.05	6.40	8.19	-13.63	-9.96	134.30	127.50	131.50
MAX	6.10	5.19	7.21	14.14	16.10	12.93	-61.56	-16.75	144.60	138.90	146.10

SA/SD = Standard deviation : An indicator of how far breeding values/selection indices are distributed around the average.

Rams with Progeny



Genotyped

EBV - Estimated Breeding Value

*Inbreeding in red is high

Indices >= 124
Above breed avg
Indices <= 76

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

Index: Breeding value expressed around 100, where 100 is the average EBV of all active animals of the breed

Animal Information			Parents & Progeny				Selection Indices			EBV - Weights						EBV - Fertility									
Animal ID BDate	Birth Status	% In- breeding	Sire ID Dam ID	1st generation		2nd generation		DLMI	DGI	DRI	Weaning Weight		Comb	Post-Wean		Lambs Weaned	TWW		AFL		ILP		Dam EPI T Lambed N Weaned		
				Prog	Nr	Prog	Nr				Dir	Mat		Acc	Index		Acc	Index	Acc	Index	Acc	Index		Acc	Index
				weaned	flocks	weaned	flocks				EBV Acc	EBV Index		EBV Acc	EBV Index		EBV Acc	EBV Index	EBV Acc	EBV Index	EBV Acc	EBV Index			
			Active Breed Average:					100	100	100															
			Ram Flock Average																						
			Number of rams with progeny in the flock:																						

Active rams, born since Jan 2022, with progeny in the flock

Young Rams



EBV - Estimated Breeding Value

*Inbreeding in red is high

Indices ≥ 124
Above breed avg
Indices ≤ 76

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

Index: Breeding value expressed around 100, where 100 is the average EBV of the active animals of the breed

Animal Information			Parents	Selection Index			EBV - Weights				EBV - Fertility							
Animal ID BDate	Birth Status	% In- breeding	Sire ID Dam ID	DLMI	DGI	DRI	Weaning Weight				Lambs Weaned	TWW	AFL	ILP	Dam T Lamberd EPI N Weaned			
							Dir	Mat	Comb	Post-Wean								
							EBV Acc	EBV Index	EBV Acc	EBV Index							EBV Acc	EBV Index
Active Breed Average:				100	100	100												
1																		
Ram Flock Average :																		
Total number of young rams :																		

Young rams born since Jan 2024, with at least one parent known



Ewes with Progeny



Genotyped

EBV - Estimated Breeding Value

*Inbreeding in red is high

Indices >= 124
Above breed average
Indices <= 76

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

Index: Breeding value expressed around 100, where 100 is the average EBV of the active animals of the breed

Animal Information			Parents	Selection Index			EBV - Weights				EBV - Fertility									
Animal ID BDate	Birth Status	% In- brding	Sire ID Dam ID	DLMI	DGI	DRI	Weaning Weight				Lambs Weaned		TWW		AFL		ILP		EPI	Times Lamed Nr Weaned
							Dir	Mat	Comb	Post-wean										
							EBV Acc	EBV Index	EBV Acc	EBV Index	EBV Index	EBV Acc	EBV Index							
Active Breed Average :				100	100	100														
1																				
Ewe Flock Average Number of ewes with progeny in the flock:																				

Young Ewes



Genotyped

EBV - Estimated Breeding Value

*Inbreeding in red is high

Indices >= 124
Above breed avg
Indices <= 76

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

Index: Breeding value expressed around 100, where 100 is the average EBV of the active animals of the breed

Animal Information			Parents	Selection Indices			EBV - Weights				EBV - Fertility									
Animal ID BDate	Birth Status	% In- brding	Sire ID Dam ID	DLMI	DGI	DRI	Weaning Weight		Comb	Post-Wean		Lambs weaned	TWW		AFL		ILP		Dam	
							Dir	Mat		Acc	Index		Acc	Index	Acc	Index	Acc	Index	EPI	T Lambed N Weaned
Active Breed Average:				100	100	100														
1																				
Ewe Flock Average: Total number of young ewes:																				

Ewes born since Jan 2024, with at least one known parent

