

## Genomic-Only Breeding Values for Merino Producers

*Smarter selection. Stronger flocks. Sustainable progress.*

### Genomic-Only Breeding Values testing

Genomic-Only Breeding Values (gBV) testing is a Merino-only genomic selection tool that allows producers to make early, accurate breeding decisions using DNA information alone. With one simple test, producers can describe the genetic merit of their sheep for traits that impact profitability, welfare, and sustainability, without needing phenotype data or Sheep Genetics membership.

gBV testing enables you to:

- Select animals that best match your breeding objectives
- Rank rams and ewes within flock with higher precision
- Remove low-merit animals early in life
- Build a stronger, more profitable flock for the future

### Why use gBVs?

- **Accurate:** Higher confidence in selection decisions.
- **Simple:** One DNA test delivers multiple traits.
- **Efficient:** Make selection and culling decisions earlier.
- **Comprehensive:** Covers wool, growth, carcase, health, welfare, and reproduction traits.
- **Accessible:** Suitable for stud and commercial flocks, no Sheep Genetics membership or phenotype records required.
- **Profitable:** Research shows genomic selection delivers 2–3 times more value than phenotype alone.\*

### How it works

1. DNA Test: A simple tissue or blood sample is taken from each animal.
2. Genomic Analysis: The genotype is compared to the Merino Genomic Reference Population, a large database of sheep with both performance and DNA records.
3. Prediction: Shared genes predict which traits each animal will pass on to its progeny.
4. Results:
  - Parentage & Poll Status – sent once lab processing is complete
  - Genomic Breeding Values & Flock Profile – delivered after the next MERINOSELECT analysis (runs fortnightly)



## Reported traits and indexes

Trait	Meaning
Yearling Clean Fleece Weight (YCFW)	Higher = genetically heavier fleece weight
Yearling Fibre Diameter (YFD)	Lower = finer wool
Yearling CV of Fibre Diameter (YDCV)	Lower = less fibre variation
Yearling Staple Length (YSL)	Higher = longer staple
Yearling Curvature (YCURV)	Lower = less fibre curvature
Post Weaning Weight (PWT)	Higher = faster growth
Yearling Weight (YWT)	Higher = faster growth
Fat Depth (YFAT)	Higher = more fat cover
Eye Muscle Depth (YEMD)	Higher = more lean meat
Early Breech Wrinkle (EBWR)	Lower = plainer breech
Post Weaning Worm Egg Count (PWEC)	Lower = better worm resistance
Weaning Rate (WR)	Higher = more lambs weaned per ewe joined
Condition Score (CS)	Higher = ewes in better joining condition

Indexes: Fine Wool (FW), Wool Production (WP), Sustainable Merino (SM), Merino Lamb (ML)

## Understanding your results

gBV results are presented as:

- **1–10 Ranking:** 1 = top 10% of the flock, 10 = bottom 90% of the flock (see example in table below)
- **Accuracy:** Provided for each trait, showing reliability of prediction
- **Flock Profile:** Benchmarks your flock's average performance against other MERINOSELECT flocks.

Note that gBVs are within-flock results and are not equivalent to Australian Sheep Breeding Values (ASBVs).

ID	pwt	ywt	yfat	yemd	ycfw	yfd	ydcv	ycuv	ysl	pfec	ebwr	cs	wr	FW Index	WP Index	SM Index	ML Index
Animal 1	6	5	8	9	3	10	6	7	1	8	7	10	1	2	3	6	3
Animal 2	7	6	2	4	7	4	2	4	2	4	3	2	2	4	3	2	4
Animal 3	3	2	3	7	1	2	2	9	3	8	8	6	5	1	1	1	1
Animal 4	5	6	6	6	8	10	6	3	3	4	2	6	1	5	5	7	4
Animal 5	3	2	8	7	8	8	6	3	9	4	9	4	9	10	10	10	9
Animal 6	10	9	4	9	1	5	1	4	3	2	10	8	6	6	4	5	8
Animal 7	6	8	8	8	3	6	1	6	4	7	8	8	9	8	8	7	8
Animal 8	8	9	3	1	6	2	2	6	2	3	9	4	6	6	6	5	6
Animal 9	8	9	6	8	2	3	1	5	3	9	10	10	8	9	7	6	10

## Comparison of Genetic Evaluation Options

A Flock Profile gives an overview of your flock’s genetic strengths and weaknesses. Genomic-Only Breeding Values provides individual, within-flock rankings and accuracies, which is considered a strong step forward for producers not ready for full ASBVs. Full ASBV participation through MERINOSELECT adds benchmarking across flocks and years for stud-level comparisons and sale marketing.

Feature	Flock Profile	gBVs	Full ASBVs (Sheep Genetics Membership)
Breed eligibility	Merino only	Merino only	All breeds
Level of comparison	Flock average only	Within flock (individual animals)	Across flock and years (industry benchmark)
Data inputs	Genotype only (20 animals only)	Genotype only (20 animals only)	Phenotypes + genotypes + pedigree
Sheep Genetics membership	Not required	Not required	Required
Traits reported	13 traits (average)	13 traits + 4 indexes	82 traits + breed-specific indexes
Index values provided	Average only	Individual animal scores	Breed benchmarked indexes
Results scale	Flock average percentile	1 - 10 within flock ranking + accuracy per trait	ASBV values + accuracy
Decision support	Benchmark flock position	Select top and bottom performers	Compare animals across flocks and years
Accuracy level	Moderate	High within-flock	Very high (industry wide)
Typical use case	Baseline flock assessment	Practical within-flock selection	Stud breeding and ram marketing
Cost per animal	Low (pooled sample)	Moderate (per animal DNA test)	Higher (testing + data submission +membership)