

Genomic Testing in Sheep at a Glance

Parentage

- Samples from multiple rams and/or ewes can be submitted and offspring are matched to the correct parent using genetic information.

Animal ID	Ram ID	Ewe ID
12345	A123	00123
12346	H456	00124

Single-Gene Tests

Animal ID	Genotype
12345	RR
12346	RR
12347	QR
12348	QQ

- Single-gene or single-SNP tests are reported as a genotype in letters or numbers.
- Examples of single-gene tests include ovine progressive pneumonia (OPP) resistance, Callipyge, fecundity, and scrapie (RR = greater resistance, QR = intermediate resistance, QQ = less resistance).

Estimated Breeding Values (EBVs)

- Estimated breeding values (EBVs) incorporate information from the animal's performance, pedigree, and progeny.
- Genomic EBVs (GEBVs) include genetics which increases accuracy.
- Values are often reported as an animal's deviation (+/-) from the breed mean, which is not always 0.
- EBVs are calculated by the National Sheep Improvement Program (NSIP).

GEBV	BWT	WWT	PWWT
Ram A	0.716	4.970	9.172
Ram B	0.379	5.900	10.928

GEBV	MWWT	NLB	NLW
Ram A	0.109	0.102	0.072
Ram B	0.182	0.136	0.082

Selection Indices

Index	Carcass Plus	SRC\$
Ram A	186.52	127.04
Ram B	175.56	126.71
Ram C	179.02	126.11

- Selection indices incorporate several traits at specific statistical weights into a single value for selection.
- Selection indices are reported often as a dollar (\$) value compared to breed average.

For more information, visit: <https://www.extension.wsu.edu/animal-genomics>

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EBV and GEBV Terminology Key

<u>Production EBVs / GEBVs</u>	
Acronym	Trait
BWT	Birth weight
WWT	Weaning weight
PWWT	Post weaning weight
YEMD	Yearling eye muscle depth
YFAT	Yearling fat
YGFW	Yearling greasy fleece weight
YFD	Yearling fiber diameter
YSL	Yearling staple length
WFEC	Weaning fecal egg count
PFEC	Post weaning fecal egg count
PEMD	Post weaning eye muscle depth
PFAT	Post weaning fat

<u>Maternal EBVs / GEBVs</u>	
Acronym	Trait
MWWT	Maternal weaning weight
NLB	Number of lambs born
NLW	Number of lambs weaned

<u>Index \$Values</u>	
Acronym	Trait
US Range Index	Index developed for selection on range performance
US Maternal Index	Index developed for selection on maternal traits and fleece
US Hair Index	Index developed for selection of hair breed performance
Carcass Plus Index	Index developed for selection on carcass traits
SRC\$ Index	Self-replacing carcass index for selection on growth and carcass traits

Questions? Contact Us!

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