

Getting Started

with SHEEP GENETICS



Sheep Genetics provides you with practical information on the genetic potential of your sheep. Sheep are ranked according to various production characteristics using Australian Sheep Breeding Values (ASBVs) across flock or Flock Breeding Values (FBVs) within flock.

This document outlines the steps in the process of data transfer between you, the breeder, and the Sheep Genetics database and analysis.

Key Steps for Getting Started

1. Subscribe to Sheep Genetics by submitting a subscription form.
2. Review your current records.
3. Consider your breeding objectives and decide which traits you want to measure.
4. Collate your records and manage your data appropriately for the Sheep Genetics database.
5. Comply to the Sheep Genetics Quality Assurance system.
6. Submit your data to database@sheepgenetics.org.au
7. Receive and interpret your LAMBPLAN or MERINOSELECT reports.

1. Subscribe to Sheep Genetics

Submit a subscription form to Sheep Genetics. Once received, it will be processed and you will be sent a new member package. This package includes a copy of the Sheep Genetics Breeders Quality Assurance (QA) Manual, a reports folder, a Sheep Genetics Communications Kit and other relevant information. Please note payment of the annual subscription fee of \$330 is required before the subscription can be finalised. Subscription forms are available upon request from the Sheep Genetics office or at www.sheepgenetics.org.au

2. Review your current records

Identify what records you currently collect for your ram breeding enterprise. For example this may include live weights at varying age stages, fleece measurements and worm egg counts. In order to submit this information to Sheep Genetics, you will need:

- **Pedigree** - sire pedigree is required on as many animals as possible, and full pedigree is highly desirable where practical.
- **Dates** - date of birth (or an estimate) and dates of data collection e.g. weighing, fleece testing, carcase scanning or worm egg counts.
- **Management groups** - sheep that are run together under the same environmental conditions are called a management group. You need to identify which sheep belong to each management group when submitting data to Sheep Genetics.
- **16 digit ID** - each animal must be identified with a unique 16 digit ID. The Sheep Genetics QA manual describes how to build this number for each sheep.
- **Base traits** - A base trait is a measurement you are required to submit to Sheep Genetics in order to receive meaningful results. The base trait you are required to measure depends on the production characteristics you would like to improve in your sheep. Please see section 2.1 inside this page.

2.1 Base traits

The base traits you are required to measure depend on the production characteristic(s) you are concentrating on. Points (a) to (e) below describe the base traits for each of the five major production areas that Sheep Genetics evaluates:

- Live weight - when trying to improve growth rate, measure weaning weight or an older age weight on 100% of sheep in each management group.
- Carcase - when trying to improve carcase characteristics (muscle, fat & yield), measure fat and eye muscle depth at early post weaning or older on >75% of sheep in each management group.
- Fleece weight - when trying to improve fleece weight, measure greasy fleece weight at a minimum of 10 months of age, with at least 6 months wool growth, on 100% of sheep in each management group.
- Fleece quality - when trying to improve fibre diameter and other quality traits, measure at a minimum of 10 months of age, with at least 5 months wool growth, on 100% of sheep in each management group.
- Worm resistance - when trying to reduce worm burdens, measure Worm Egg Count (WEC) at weaning or older on >75% of sheep in each management group.

Please note in all cases it is desirable to measure 100% of each management group for each base trait relevant to your breeding program. However, there are a number of exemptions outlined in the QA Manual.

3. Consider your breeding objectives and decide which traits you want to measure and evaluate with Sheep Genetics

The breeding objective is the goal of your breeding program. It consists of those traits you wish to change genetically, with a weighting on each trait that reflects how important you consider that trait to be to your genetic goal.

Sheep Genetics provides a range of different traits to suit a variety of different breeding objectives. All traits are optional, however breeders must keep in mind the base traits as previously described to ensure data quality is of a high standard.

Many traits can be measured and submitted to Sheep Genetics at varying stages in an animals life. Table 3.1 describes the basic range of traits available for LAMBPLAN and MERINOSELECT subscribers. Other important traits, such as structural soundness and breech scores, are being incorporated into Sheep Genetics over time. Please refer to the Sheep Genetics website to receive updates on the development of these traits (www.sheepgenetics.org.au).

Detail on how to best measure each of these traits is found in the Sheep Genetics QA manual, which you will receive upon subscribing to LAMBPLAN or MERINOSELECT.

Please note that there are no compulsory traits.

3.1 Traits evaluated and reported by LAMBPLAN and MERINOSELECT and the age stages they can be measured at

Trait Trait name	Abbreviation	Age stage – Name – period – abbreviation							
		Birth birth – 24 hours	Weaning 42 – 120 days (6-16 weeks)	Early post wean 120 – 210 days (4-7 months)	Post weaning 210 – 300 days (7-10 months)	Yearling 300 – 400 days (10-13 months)	Hogget 400 – 540 days (13-18 months)	Adult > 540 days (> 18 months)	
		B	W	E	P	Y	H	A	
Body weight	WT	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	
Eye muscle depth	EMD	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	
Fat depth	FAT	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	
Greasy fleece weight	GFW	Currently available	Currently available	Currently available	Under Development	Currently available	Currently available	Currently available	
Clean fleece weight	CFW	Currently available	Currently available	Currently available	Under Development	Currently available	Currently available	Currently available	
Fibre diameter	FD	Currently available	Currently available	Currently available	Under Development	Currently available	Currently available	Currently available	
Coefficient of variation of FD	CV	Currently available	Currently available	Currently available	Under Development	Currently available	Currently available	Currently available	
Staple strength	SS	Currently available	Currently available	Currently available	Under Development	Currently available	Currently available	Currently available	
Scrotal circumference	SC	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	
Worm Egg Count	WEC	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	Currently available	

Currently available
 Currently unavailable
 Under Development



For a full list of traits please contact Sheep Genetics or visit www.sheepgenetics.org.au

4. Collate your records and manage your data

Sheep Genetics can only accept data in electronic format. For this reason, breeders need to use a computer software package to submit their data, or utilise the services of a data manager to submit data on their behalf.

4.1 Software packages

There are many commercially available software packages and one freeware package that can help you collate your records. When choosing software, please consider:

- How do you want to use the information that you collect on-farm and then receive reports from LAMBPLAN or MERINOSELECT?
- How easy is it to import data that you collect into this software package? For example, can you easily import data from fleece testers, WEC laboratories or carcase scanners?

- Does the software complete validation routines to ensure the data entering Sheep Genetics meets quality requirements?
- Does the software allow you to import your ASBVs/FBVs from Sheep Genetics outputs?
- How do costs compare and what support is available?

A list of software providers and a brief description of their product can be found on the Sheep Genetics website. Sheep Genetics does not endorse any particular software product.

4.2 Data managers

Data managers offer a range of services including data preparation for Sheep Genetics. A list of data managers is available on the Sheep Genetics website. Should you chose to use a data manager, ensure you are clear about what you wish to achieve and that they can offer you “value for money”.



5. Comply to the Sheep Genetics Quality Assurance (QA) System

To ensure the integrity of data entering the Sheep Genetics database, a QA system has been developed. Breeders should meet all relevant QA requirements when submitting their data into the database.

In summary, the following requirements must be met:

- All sheep must have a unique 16 digit ID
- Facilities and equipment used for taking measurements need to be of an appropriate standard and in good working condition
- At joining, mating groups must be managed to ensure there is no preferential treatment between groups
- Management procedures are in place to ensure that data collected measures genetic differences between sheep in an unbiased fashion
- Appropriate base traits are measured on the correct proportion of progeny.

6. Submit your data

Data needs to be emailed to:

database@sheepgenetics.org.au

or a CD or floppy disk can be sent to the Sheep Genetics office.

After you have submitted your data, it will be checked by the Sheep Genetics database managers for validity and you will receive a reply email stating that your data has been received. If you do not receive a reply email within 2 working days, please resend the data and contact the Sheep Genetics office.



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