

Selecting the right ram — *Sheep Genetics Australia*

Genetic improvement is an important determinant of success of the Australian sheep industry. Therefore, selection of sheep must be directed mostly towards characteristics which will improve the profitability of your sheep enterprise. There is huge potential for genetic gain in most sheep flocks and this is one way of improving productivity and keeping up with the cost-price squeeze.

Genetic improvement with the aid of breeding values has been widely used in the poultry, dairy/beef and pig industries for many years. However, sheep breeders have unfortunately been slow on the up-take of information available on genetic improvement, even though it has been shown that sustainable genetic progress, by cost-effective measures, can be 1 to 2% per year.

This article outlines the approach to selecting the right ram to use in a commercial flock, either wool- or meat-producing or dual purpose.

Making an informed decision on which ram to buy.

A ram contributes more of its genetics to the sheep flock than the ewe. Over its life-time, a ram will pass half of its genetics on to approximately 250 lambs, whereas a ewe will only pass half of her genetics on to the approximately seven lambs. Therefore, the selection of rams, whether they are bred on farm or bought from a breeder, is paramount to the success of a genetic improvement program.

Decisions at a couple of stages need to be made when planning for genetic improvement. These are decisions on: a breeding objective, how to measure improvement, which stud to buy rams from and which rams to choose from that stud.

Defining a breeding Objective

For the success of a genetic improvement program, a defined breeding objective needs to be developed. This will involve thought about your target market, breeding system, on-farm resources and most profitable production characteristics (traits).

A breeding objective includes identification of key traits essential for achieving your production targets. Traits might include reproduction, growth, fleece, carcase, disease resistance or a combination of these. Carefully consider which traits are important to your breeding objective, because the more traits included, the longer it will take to achieve the desired outcome. Quantify where you are now with the key traits and where you would like to be. For example, you might want to increase average greasy fleece weight by 0.5kg, maintain fibre diameter and increase hogget weight by 5kg.

Genetic improvement of a flock does not happen overnight. It may take 7 to 10 years to observe change. Therefore, producers planning a program of genetic improvement need to consider the key drivers (eg. Markets) of their program over a long-term period, and their commitment to their plan.

Measuring improvement

Measurement of success is also important for genetic improvement. Identify at the start, what measurements will be required to assess improvement and success towards achieving the breeding objective. It is also critical to determine if collection and recording of the measurement is realistic and sustainable long term. Feedback from wool and/or lamb/sheep sales is an easy method of measurement and should be utilized to compare progress over time. Depending

on your breeding objective, other ways to record improvement may be through marking/weaning percentages, regular weighing of lambs to determine growth rates, adult weight, mid-side sampling, fleece-weighing etc.

Selecting a bloodline (stud)

Before selecting a ram, do your research on which studs have the same breeding direction as your breeding objective. Once you have identified a number of studs, to narrow the selection down to one or two, compare the ASBV's (average breeding values described in more detail later) of the traits of interest of the current traits available from that stud. It is also worthwhile selecting studs which are located in a similar environment to your property.

Some producers will select more than one bloodline, particularly if breeding their own rams, in which case they might buy semen, rather than rams, for artificial insemination (AI)

Selecting the right ram

After you have selected a stud, making a decision on which ram to choose is the next tough decision. But before deciding, you need to know the average merit of your own flock so you can select a ram that will contribute positively to your breeding objective.

If you have been using rams from the same stud for a number of years (at least 10 years), and you have been using the average rams from this stud for certain key traits, you can assume your flock's performance will be slightly below the average performance of the current rams available from that stud. Therefore, if you continue to select rams from this stud, you will contribute positively to your breeding objective.

On the other hand, if you have not routinely used rams from the same stud or have recently made a significant change to your breeding objective, it may pay to determine your flocks average merit. This can be done by comparing the key traits (that are important to your market/s) of your ewes and their progeny, with other flocks. Valuable information can be gleaned from sire evaluations/progeny trials and wether trial (for Merino bloodline choices) in your region. You can also conduct your own sire evaluation on-farm.

If you make a drastic change in your breeding objective and intended markets, it may be quicker, and cheaper, to sell your ewe flock and replace with ewes with merit which match your breeding objective.

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