Sheep GENETICS

MEAT & LIVESTOCK AUSTRALIA

MERINOSELECT indexes

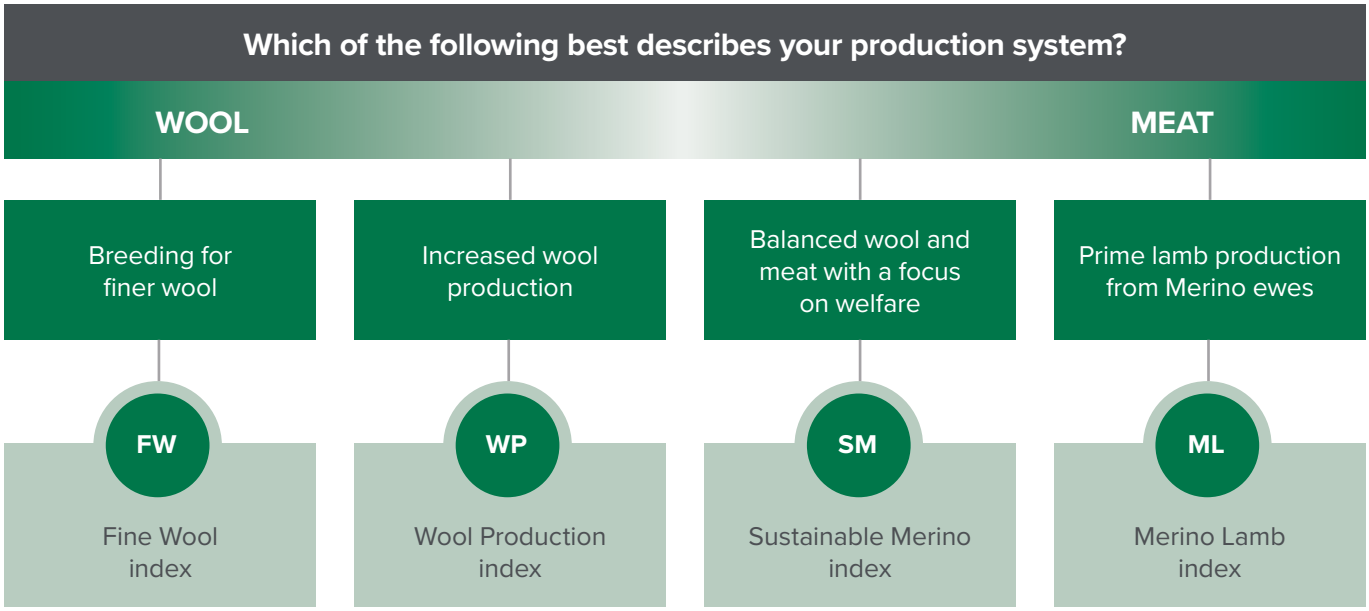
A ram buyer's guide

Indexes help you select animals for use within a breeding program when there are many traits of importance. Using indexes in your ram purchasing decisions allows you to make balanced genetic progress towards more profitable sheep for your production system. A ram with a higher index will produce progeny that are more profitable in that production system.

Choosing the right index

MERINOSELECT provides four standard indexes covering a broad range of production systems, from wool-focused indexes for producers aiming to go finer while increasing wool production (Fine Wool), or with greater emphasis on wool cut (Wool Production) through to systems deriving more balanced income from wool and sheep sales where a focus on sustainability traits is important (Sustainable Merino), and prime lamb production from Merino ewes (Merino Lamb).

The following flowchart helps producers determine the best index for their Merino production system:



How to use the chosen index to assist in purchasing decisions:

Before the sale:

1. Rank animals in the sale on the value of your chosen index.
2. Consider the individual ASBVs which are important to you to create a short list of rams to look at on sale day.

At the sale:

3. Look through your shortlist of rams to find the ones that meet your structural and type requirements.

To assist in benchmarking sale rams relative to the current year drop of animals in the Sheep Genetics database, use the percentile band tables, which are found on the Sheep Genetics website: search.sheepgenetics.org.au/search/dashboard. The animals in the top tenth percentile rank the highest on the index, and those in the ninetieth percentile rank the lowest.

A brief overview of each of the indexes is included below. If you would like further information on how these selection indexes are generated, please refer to MERINOSELECT Indexes (Breeder) at sheepgenetics.org.au/Getting-started/ ASBVs-and-Indexes

Fine Wool (FW) index

The Fine Wool index is based on a production system where the majority of income is from the wool clip. Reducing the micron of the wool is a strong focus within this index. The production system modelled in the Fine Wool index is based on producing 15–17 micron wool from the breeding flock and a mixed age wether flock. The wool to meat income ratio of the production system is 75:25 weighted towards wool. In addition to improving wool traits and reproduction, the index also has emphasis on reducing wrinkle and worm egg count (Table 1).

Table 1. Typical trait changes when using FW index

Trait	Expected change
Fleece weight	Increase
Fibre diameter	Decrease
Staple strength	Maintain
Fibre diameter coefficient of variation	Decrease
Growth and lean meat yield	Increase
Mature weight	Maintain
Condition score	Maintain
Reproduction (conception, litter size, ewe rearing ability)	Increase
Breech wrinkle	Decrease
Worm egg count	Decrease

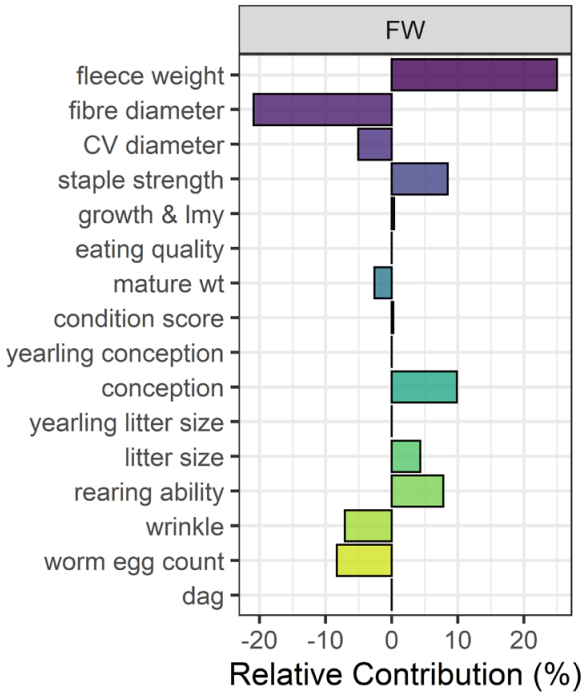


Figure 1: Relative economic contribution of traits to the Fine Wool (FW) index. The longer the bar the greater the impact on the index

Wool Production (WP) index

The Wool Production (WP) index is based on a production system where the majority of income is from the wool clip with a strong focus on wool production. The production system modelled for the Wool Production index is a self-replacing system producing 16–18 micron wool from the breeding flock and a mixed age wether flock. With a wool to meat income ratio of 71:29 for this production model, the index focuses on genetic improvement of fleece weight, fibre diameter, staple strength, and reproduction, along with emphasis to reduce wrinkle.

Table 2. Typical trait changes when using WP index

Trait	Expected change
Fleece weight	Increase
Fibre diameter	Decrease
Staple strength	Increase
Fibre diameter coefficient of variation	Decrease
Growth and lean meat yield	Increase
Mature weight	Maintain/Increase
Condition score	Maintain
Reproduction (conception, litter size, ewe rearing ability)	Increase
Breech wrinkle	Decrease

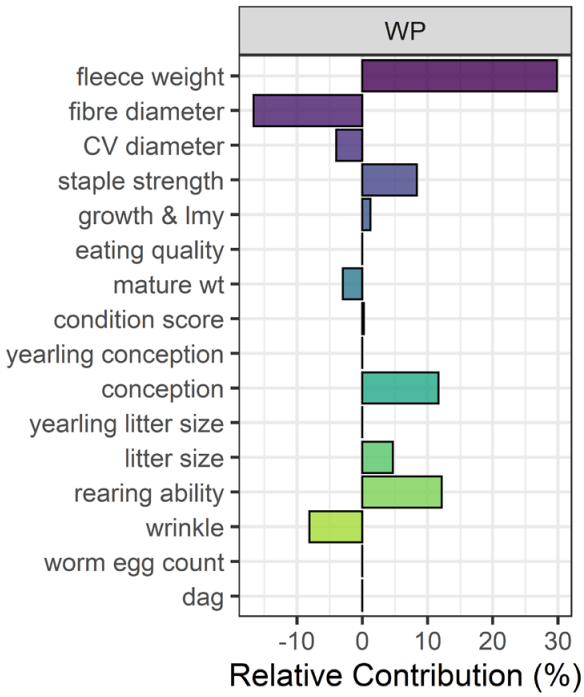


Figure 2: Relative economic contribution of traits to the Wool Production (WP) index. The longer the bar, the greater the impact on the index

Sustainable Merino (SM) index

The Sustainable Merino (SM) index is based on a production system where the income derived is a balance of sheepmeat and wool clip, with a large focus on improving the quantity and quality of the wool remains. Based on a self-replacing Merino flock the production system produces 17–19 micron wool with lambs sold off-shears at a post weaning age. The wool to meat income ratio of the production model is 46:54 and emphasis is included on sustainability traits to reduce wrinkle, dag, and worm egg count. An additional penalty has been placed on increasing mature size in this index.

Table 3. Typical trait changes when using SM index

Trait	Expected change
Fleece weight	Increase
Fibre diameter	Maintain/Decrease
Staple strength	Maintain
Fibre diameter coefficient of variation	Maintain
Growth and lean meat yield	Increase
Mature weight	Limited increase
Condition score	Increase
Reproduction (conception, litter size, ewe rearing ability)	Increase
Breech wrinkle	Decrease
Worm egg count	Decrease
Dag	Decrease

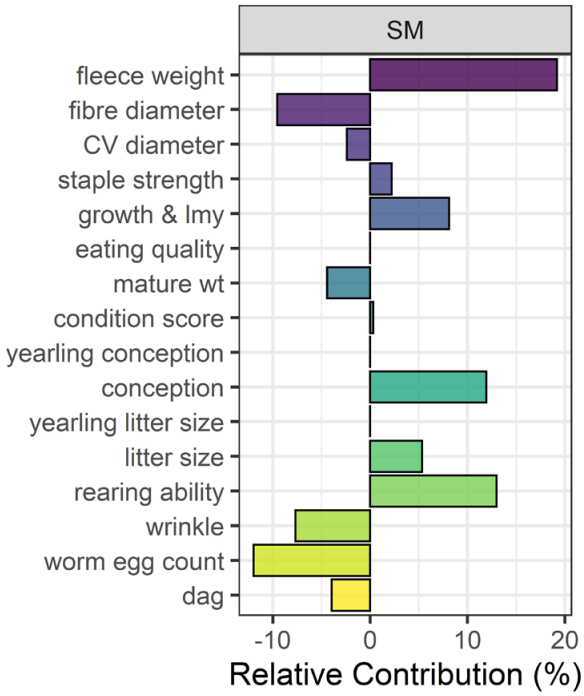


Figure 3: Relative economic contribution of traits to the Sustainable Merino (SM) index. The longer the bar, the greater the impact on the index

Merino Lamb (ML) index

The Merino Lamb index is based on a production system where the producer is looking to take advantage of the wool production of the Merino (18–21 micron) in a self-replacing lamb production operation. A strong focus on producing lambs from the Merino ewe means that the production system slightly favours profits from sheepmeat, 31:69 wool to sheepmeat ratio. The flock structure is based on joining ewes as ewe lambs with the older aged ewes joined to a terminal sire to produce crossbred prime lambs. The system also focuses on maintaining intramuscular fat to meet an industry desire for improved eating quality.

Table 4. Typical trait changes when using ML index

Trait	Expected change
Fleece weight	Increase
Fibre diameter	Maintain/Increase
Staple strength	Maintain
Fibre diameter coefficient of variation	Maintain
Growth and lean meat yield	Increase
Eating quality	Increase
Mature weight	Increase
Condition score	Increase
Reproduction (conception, litter size, ewe rearing ability)	Increase
Yearling reproduction (conception, litter size, ewe rearing ability)	Increase
Breech wrinkle	Decrease

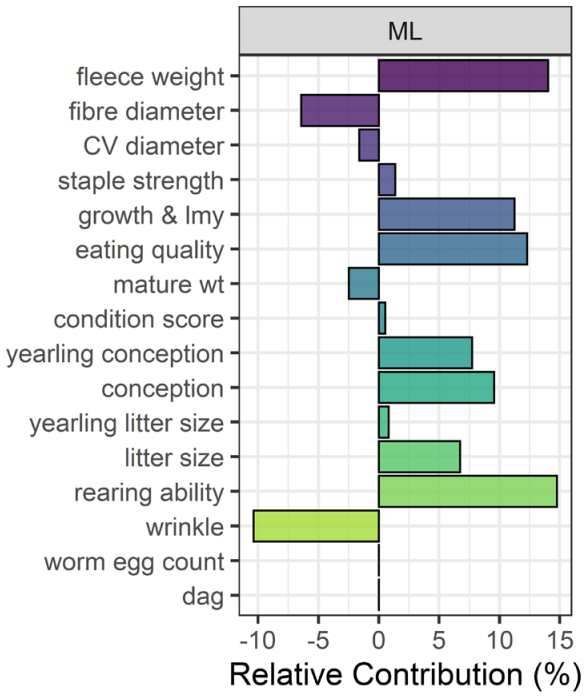


Figure 4: Relative economic contribution of traits to the Merino Lamb (ML) index. The longer the bar the greater the impact on the index

Summary of MERINOSELECT indexes

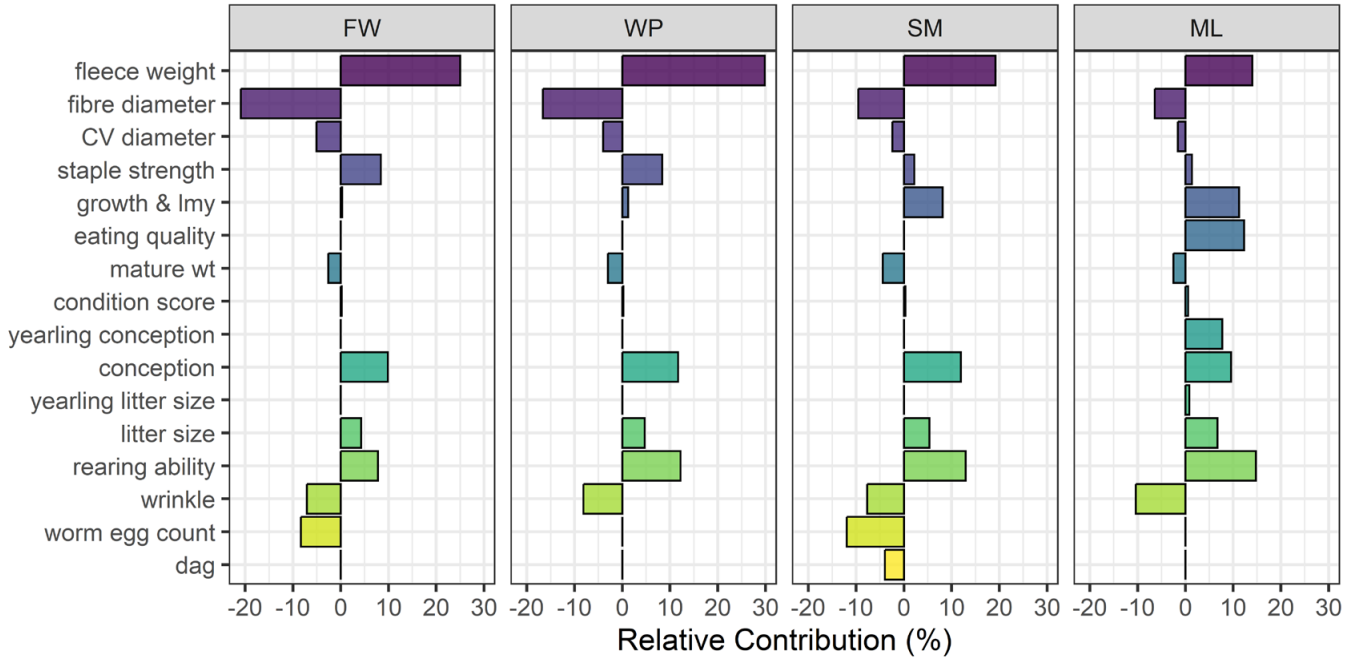


Figure 5. Relative economic contribution of traits in all MERINOSELECT indexes

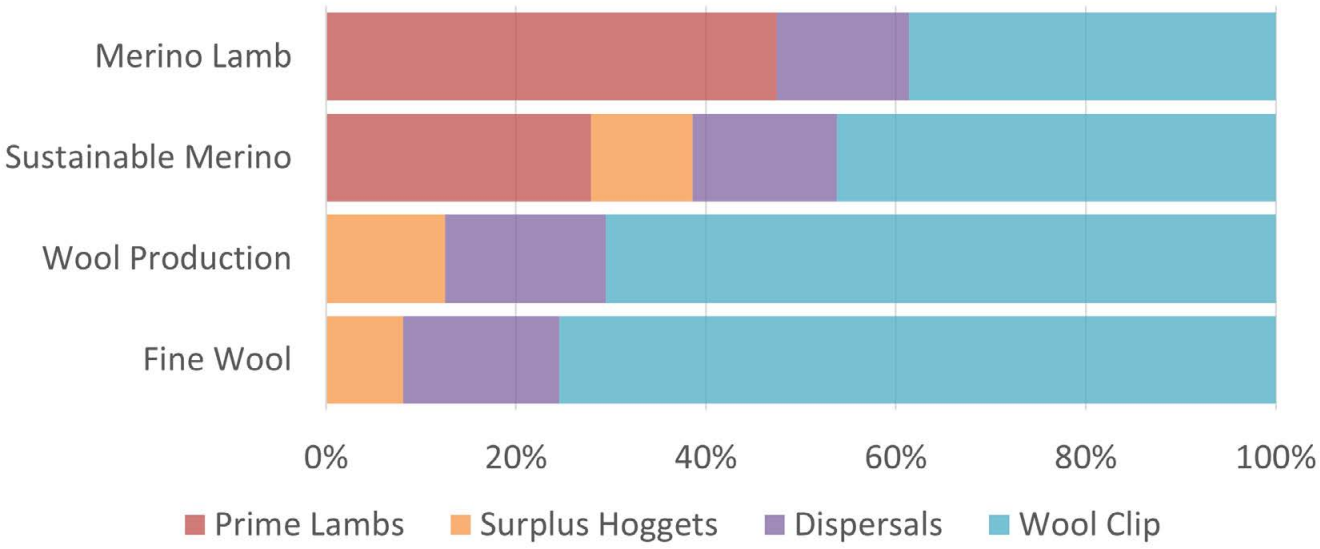


Figure 6. Distribution of the production system income spread across sheepmeat sales from prime lambs, surplus hoggets and adult sheep dispersals, and from the total wool clip of the production system

Factsheet current as at May 2024

More information | 02 8055 1818 | info@sheepgenetics.org.au | sheepgenetics.org.au

MLA acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.