MERINOSELECT indexes

A guide from Sheep Genetics

Why use a selection index?

Indexes are an important tool to drive genetic improvement in ram breeding programs. Each index combines multiple measured traits, or ASBVs, into a single value that reflects a certain production emphasis on these traits. A range of traits are included which are of economic or functional importance. Collectively, these traits make up the "breeding objective" of the index which aims to improve profitability in commercial sheep enterprises.

Indexes are useful because they balance genetic improvement appropriately across a range of traits with the emphasis of each individual trait determined by it's relative importance to a selection approach for a particular style of production system.

> **"Appropriately designed indexes are central to the goal of breeding more profitable sheep.**

However, it is recommended that the performance of individual measured and visually assessed traits also be used in conjunction with indexes.

Choosing the right index

Merino Superior Sires (MSS) reports four indexes based on four commercial production systems, these are outlined in the figure below.

The Sheep Genetics website gives further index descriptions and explains that there are 'base' and 'plus' levels for each index with the latter including the ASBVs of additional traits. Sires reported in MSS have accurate ASBVs for many of these additional traits and so MSS reports the plus indexes; DP+, MP+, FP+ and WP+.

Dual Purpose (DP+)

Income is a balance of wool from breeding ewes and meat production from lambs by Merino and terminal sires.

Merino Production (MP+)

Income is a balance of wool and surplus Merino sheep sales with balanced improvement of fleece weight and fibre diameter.

Fibre Purpose (FP+)

Income is mainly from the wool clip with a focus on superior wool quality through improving fibre diameter, CV and staple strength.

Wool Production (WP+)

Income is a balance of wool and surplus Merino sheep sales with greater emphasis on increasing fleece weight.

> **"When selecting on these indexes the long-term responses will vary depending on the traits measured, available pedigree, use of genomics, flock structure and selection emphasis on the index.**

The changes in individual traits from using an index depend on the information you record in your flock. If you want to improve, or even just maintain a trait, you must record it to ensure ASBVs are sufficiently accurate for the index to do its job.

For detailed explanations and further information on indexes visit:

www.sheepgenetics.org.au

Sheep Genetics have resources available for both ram breeders and ram buyers.