

Benchmarking the Genetic Potential of Sheep Flocks on Eyre Peninsula

Darryl Smith¹, Roy Latta² and Mark Klante²

¹SARDI Livestock Breeding and Genetics Group, Roseworthy,

²SARDI, Minnipa Agricultural Centre

RESEARCH

Key messages

- The Minnipa self replacing merino flock is being included in the national “Sheep Genetics” database with the aim to provide Eyre Peninsula sheep producers with a benchmark to judge their flock performance at a national level.

Why do the trial?

For sheep breeding in Australia, there is a national database run by “Sheep Genetics” and two performance recording schemes “LAMBPLAN” and “MERINOSELECT” that evaluate the genetic merit of stud stock based on Australian Sheep Breeding Values or ASBVs. ASBVs can be used to compare the genetic merit of animals irrespective of where they are run in Australia.

The ongoing plan is to include the Minnipa flock within the program to help:

- educate ram buyers of the merits of ASBVs so they seek out, and buy rams from, breeders that are members of Sheep Genetics “LAMBPLAN” or “MERINOSELECT”.
- encourage more breeders to become members of Sheep Genetics “LAMBPLAN” or “MERINOSELECT” and to offer ASBVs on sale rams.
- encourage more breeders to use ASBVs when buying stud sires or semen.

How was it done?

In 2010 we commenced, with the Minnipa sheep flock, to demonstrate that:

“a combination of visual selection and measurement can be used to breed a fast growing, plain bodied animal, with good constitution, conformation and wool quality while maintaining, or improving, fleeceweight and fibre diameter. It is envisaged that the flock can be successfully managed without the need for mulesing”.

The flock is to be fully pedigreed, with both ewe and wether progeny measured for bodyweight, fleeceweight and fibre diameter. Wether progeny will be sold at 10-12 months of age. Ewe hoggets will be visually classed before being admitted into the breeding flock.

The first 2 matings, 2010 and 2011, will be used to benchmark the flock and assess traits that may need improving. In each year existing rams will be used, supplemented with 2 rams from the Turretfield flock to provide genetic linkage.

In subsequent years rams will be purchased from local Eyre Peninsula studs on the basis of visual assessment and ASBVs, concentrating on traits identified as important in the flock’s breeding objective.

Once the genetic potential of

the Minnipa flock has been benchmarked within the Sheep Genetics MERINOSELECT database it is possible that the flock could be used to benchmark other flocks, bloodlines or breeds on Eyre Peninsula.

What happened?

In 2010 the 2009 ewe hoggets were assessed both visually and through objective measurement to assist selection, results are presented in Table 1.

The MAC flock of 316 ewes were single sire mated in 8 randomly selected groups of approximately 40 ewes from February with each lamb subsequently identified to a specific ram and ewe. The performance of the eight rams in respect to lambing weights (July/August drop), lambing percentage weaned (mid-November) and weaning weights is presented in Table 2.

Table 1 September 2010 average, maximum and minimum greasy fleece weight (kg), fibre diameter (μm) and body weight (kg) of 115 2009 drop ewe hoggets at 15 months of age with 11 months wool growth, sown in 2010

Greasy fleece weight (kg)	Fibre diameter (μm)	Body weight (kg)	Visual Culls (%)
5.1 (3.3 - 7.5)	17.5 (14.4 - 21.5)	63 (40 - 71)	30

Table 2 Average birth and weaning weight (kg), and percentage lambs weaned (%) from the eight single sire mating groups.

Group	Birth weight (kg)	Weaning weight (%)	Weaned percentage (%)
1	6.0	32	110
2	6.2	30	118
3	6.5	30	116
4	8.7	33	78
5	5.7	30	92
6	6.3	27	118
7	6.6	33	103
8	5.8	28	129
Average	6.4	30	117

What does it mean?

There is a wide variation in the production performance of the 2009 drop hoggets that was addressed with a 30% culling rate that included a mix of visual and objective measurement.

We have collected initial measurements from the 2010 drop lambs. Further bodyweight gain over summer and wool quality and quantity in June measurements will be collected after which the wethers and culled ewes will be sold.

Acknowledgements

Trent Brace for his livestock management support and MAC staff Brett, Naomi and Linden for support in the shed and sheep yards.