Extending best practice wool innovations on Eyre Peninsula

Roy Latta, Jessica Crettenden and Mark Klante
SARDI, Minnipa Agricultural Centre

RESEARCH

Why do the trial?

Eyre Peninsula (EP) has the proven capacity to produce fast growing sheep as a valuable component of the mixed farming system. However, adverse seasonal conditions coupled with social and depressed market forces have reduced sheep numbers from 2.5 million to less than 2 million over the past decade.

Current positive market forces and a longer term consideration of climate change and the likely systems adaptations provide a real opportunity to reinvigorate the livestock component of the EP farming system.

The livestock component of the mixed farming enterprises on EP has had very limited uptake of technology developments in recent decades. The challenge is to provide a package incorporating the latest technology from AWI and the Sheep CRC that improves production, without increasing management input.

How was it done?

In 2010 we commenced, with the Minnipa Agricultural Centre (MAC) sheep flock, to establish a focal point for Eyre Peninsula mixed farmers 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, fleece weight 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, fleece weight and fibre diameter. Wether progeny will be sold at 10-12 months of age. Ewe hoggets will be visually and objectively classed before being admitted into the breeding flock.

The progeny from the first 2 matings in February 2010 and 2011 were used to benchmark the flock and assess traits that may need improving. In both years existing rams were used, supplemented with 2 rams from the Turretfield Research Centre (SARDI) flock to provide genetic linkage.

In subsequent years rams will be purchased from local EP studs on the basis of visual assessment and Australian Sheep Breeding Values (ASBV) concentrating on traits identified as important in the flock's breeding objective.

Once the genetic potential of the MAC 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 EP.

Previous results for comparison are presented in EPFS Summary 2010, pg 143.

What happened?

The 2010 drop hoggets were assessed both visually and through objective measurement to assist selection and 23% were culled, the results are presented in Table 1.

In 2011 the MAC flock of 333 ewes were single sire mated in 7 randomly selected groups of approximately 45 ewes from 5 February for 7 weeks. The performance of the 7 rams in respect to lambing percentage weaned (mid-November) and weaning weights is presented in Table 2.

Table 1 Maximum, minimum and average greasy fleece weight (kg), fibre diameter (µm) and body weight (kg) of 2010 hoggets at 11 months of age with 7 months wool growth

	Greasy fleece weight (kg)	Fibre diameter (µm)	Body weight (kg)	Eye muscle depth (mm)	Fat depth (mm)	Breech wrinkle (score 1-5)
Maximum	6.4	21.9	75.0	36.6	4.9	5.0
Minimum	1.8	14.5	32.2	21.6	1.0	1.0
Average	3.4	18.1	50.0	30.8	2.9	2.6

Table 2 Percentage lambs weaned (%) from the eight single sire mating groups

Group	Weaned percentage (%)
1	146
2	146
3	153
4	133
5	97
6	68
7	122
Average	**124**

What does it mean?

There was a wide variation in the production performance of the 2010 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 2011 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.

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