

## LIFETIME WOOL: MANAGING NUTRITION DURING PREGNANCY OF TWIN-BEARING EWES

K.J. COPPING and J.E. HOCKING EDWARDS

SA Research and Development Institute, Struan Research Centre, PO Box 618, Naracoorte S.A. 5271

Merino lambs born as twins generally have higher mortality, are smaller and produce less wool of slightly greater fibre diameter (Behrendt *et al.* 2006). This occurs when pregnant ewes are managed as a single mob and often there is inadequate nutrition to meet the energy requirements of the twin-bearing ewes. This study examined whether it is possible to supply enough nutrition to twin-bearing ewes during pregnancy and lactation for her offspring to perform similarly to single born lambs.

Multiparous ewes on a commercial farm near Kingston S.E. in South Australia were mated in January 2005 and managed as a single flock until it was predicted that the condition score (CS) of the ewes would fall below CS 2.7. At this time (72 days after mating), ewes were split into 2 groups (Normal Practice (NP) and Lifetime Wool (LW)). After scanning, the LW flock were split into single and twin-bearing ewes (86 days after joining). NP ewes were managed similarly to the commercial ewe flock and received approximately 70% of their energy requirements to maintain condition through pregnancy, whereas LW ewes were supplemented to meet 100% of their energy requirements. Single bearing LW ewes and all NP ewes were combined into a single flock one week prior to lambing. Twin-bearing LW ewes were managed as a separate mob until weaning.

Decision support tools developed in the Lifetime Wool project (Thompson and Oldham, 2004) were successfully used to achieve target condition score during pregnancy of a commercial flock of ewes. The 2 LW flocks maintained condition score greater than 2.7 throughout pregnancy. However, the LW twin ewes lost condition during late pregnancy and early lactation, despite being supplemented at a rate expected to maintain condition score. This reflects the difficulty in successfully meeting the high-energy demands of twin-bearing ewes when on dry pasture. At lambing (day 145), the LW flock was 0.7 CS greater than the NP flock ( $P<0.0001$ ), the LW single-bearing ewes were 0.2 CS greater than the LW twin-bearing ewes ( $P=0.0067$ ) and the single-bearing NP ewes were 0.25 CS greater than the twin-bearing NP ewes ( $P=0.0001$ ).

**Table 1. Lamb liveweights (kg; LSM±SE) from marking until 150 days of age and survival until weaning.**

	NP single	NP twin	LW single	LW twin
Marking	10.7±0.40 <sup>a</sup>	8.6±0.56 <sup>b</sup>	11.6±0.40 <sup>c</sup>	12.4±0.72 <sup>c</sup>
Weaning	18.1±0.40 <sup>a</sup>	15.4±0.56 <sup>b</sup>	19.0±0.40 <sup>c</sup>	19.1±0.72 <sup>ac</sup>
Day 150	29.5±0.46 <sup>a</sup>	27.2±0.57 <sup>b</sup>	30.3±0.48 <sup>ac</sup>	31.1±0.73 <sup>c</sup>
Survival <sup>#</sup>	82.8%	40.2%	92.8%	65.4%

<sup>#</sup>Survival to weaning (number of lambs weaned/foetus scanned)  
Superscripts within age indicate differences between flocks ( $P<0.05$ )

Twin born lambs from the LW ewes had similar liveweights to single born lambs from both the LW and NP ewes from marking until 150 days of age (Table 1). The twin born lambs from the NP ewes were lighter than all other lambs. Almost 15% more lambs were weaned from the LW ewes than from the NP ewes. This difference is a result of 10% more single-born lambs and 25% more twin born lambs surviving to weaning in the LW Flock (Table 1). However, despite additional feeding, lamb survival in the LW flock was lower for the twin born lambs compared to single born lambs.

It is possible for twin born lambs to overcome the liveweight disadvantage by feeding their mothers to meet their maintenance requirements during lambing. Increase in liveweight did not completely overcome the effect of being a twin on mortality but more twin lambs survived from ewes fed at maintenance than in ewes that were managed under “normal” management practices.

Lifetime Wool is a collaborative project between Australian Wool Innovation Ltd, Primary Industries Research Victoria, DAWA, NSW DPI, Tas. DPI, SARDI, CSIRO and over 100 wool producers across Australia.

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Email: [copping.katrina@saugov.sa.gov.au](mailto:copping.katrina@saugov.sa.gov.au)