

GROWTH FROM WEANING TO ONE YEAR OF AGE AFFECTS MAIDEN EWE FERTILITY

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Demand for Australian prime lamb is growing both domestically and internationally. To meet this demand there is a need for an increase in lamb numbers. However the Merino ewe, which is the foundation of the prime lamb industry, is known for her poor reproductive performance. The aim of this project is to increase prime lamb production through maximising reproductive performance of Merino ewes. In traditional Merino systems in Mediterranean environments, it is recommended that Merino ewe weaners are fed to reach 30 kg by summer and then their liveweight is maintained during summer and autumn. Through winter and spring it is expected that they will grow on to reach the desirable 40 kg, CS 3.0, by their hogget mating at 18 months. This paper describes the effect of post weaning nutrition on maiden Merino ewe fertility.

Merino ewe lambs from 13 Merino sires were split into 2 groups at weaning. The Rapid growth ewes (N=289) were supplemented with beans to allow them to reach an average liveweight of 40 kg at 300 days of age (April 2004). The Normal growth ewes (N=270) were supplemented with beans at approximately half the rate of the rapid growth ewes. The Normal growth ewes reached 31 kg at 300 days of age. This difference was maintained through winter when both groups were on similar pastures. During spring there was compensatory growth in the Normal group but differences in liveweight remained. When mated at 18 months of age in January 2005, the Rapid growth ewes were 5 kg heavier than the Normal growth ewes. Despite this difference in liveweight, the ewes had a similar condition score at mating (Rapid-CS=3.0; Normal-CS=2.9). The ewes were scanned for pregnancy 90 days after mating commenced and the number of foetuses was recorded.

The same proportion of ewes from the 2 growth paths were carrying single foetuses (Rapid-70%; Normal-69%), however only 12% of rapid growth ewes were not pregnant compared to 23% of the normal growth ewes. There were twice as many Rapid growth ewes carrying twins (18%) compared to the normal growth ewes (8%). This results in the potential for 21% more lambs from the Rapid growth ewes. The number of foetuses/100 ewes at each condition score follows similar trends to that reported previously (Kelly and Croker 1990), however the curve moves up the x-axis with increasing weaner nutrition (Figure 1a). There was less of an effect of weaner growth rate on the relationship between liveweight and number of foetuses/100 ewes mated (Figure 1b).

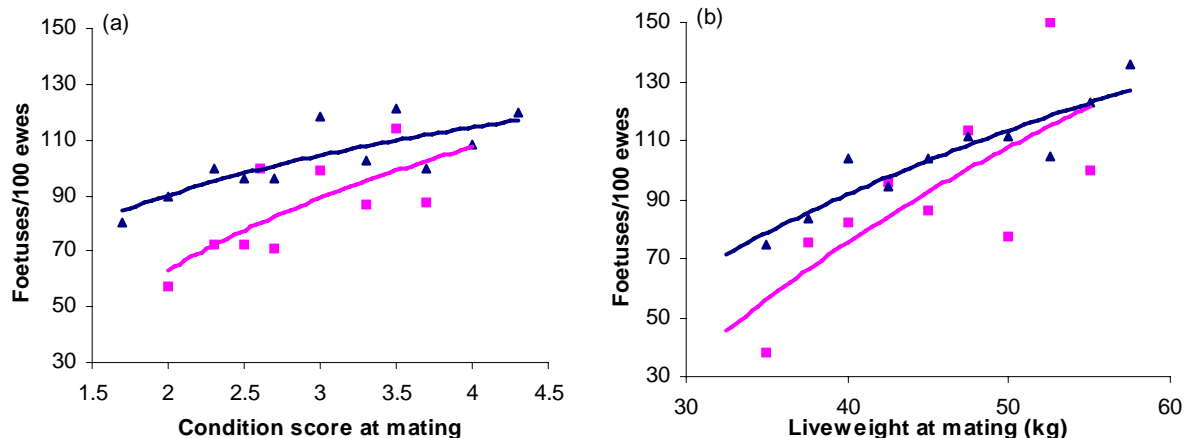


Figure 1. Relationship between (a) condition score and (b) liveweight at mating and number of foetuses per 100 ewes scanned in maiden ewes that followed a rapid growth path (▲) or normal growth path (■) from weaning to 12 months of age

Improving nutrition to Merino weaner ewes will result in more foetuses/100 ewes mated at 18 months of age. Under a traditional Merino growth path there are more dry ewes and fewer ewes carrying twins than if the ewe lambs are grown rapidly during their first 12 months.

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KELLY, R.W. and CROKER, K.P. (1990). In 'Reproductive Physiology of Merino Sheep' (Eds CM Oldham, GB Martin and IW Purvis) p.1. (School of Agriculture, University of Western Australia).

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