

LIFETIME WOOL. 7. PROGENY GROWTH RATES

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Increasing feeding levels during early and mid-pregnancy can improve the growth rates of progeny (Dwyer *et al.* 1994), especially when ewe nutrition is restricted during lactation (Dove *et al.* 1988). Greenwood *et al.* (1998) found that high birth weight lambs were more efficient up to 20 kg liveweight, and tended to grow faster than low birth weight lambs. In addition, lambs poorly grown in the first 3 months of life, although not permanently stunted, took several years to ameliorate their growth handicap (Allden 1968). This paper reports preliminary data from the Lifetime Wool project (Thompson and Oldham 2004) on the effects of ewe nutrition during pregnancy and lactation on the growth rates of their progeny to 12 months of age.

Ewes were differentially fed to achieve a mean condition score (CS) of about 2 or 3 by day ~90 of pregnancy, and then grazed varying levels of feed on offer (FOO; kg DM/ha) until lambs were weaned. Ewe liveweight profiles through pregnancy and lactation are reported by Ferguson *et al.* (2004). After weaning the progeny were grazed in common, and weighed every 2 to 6 weeks.

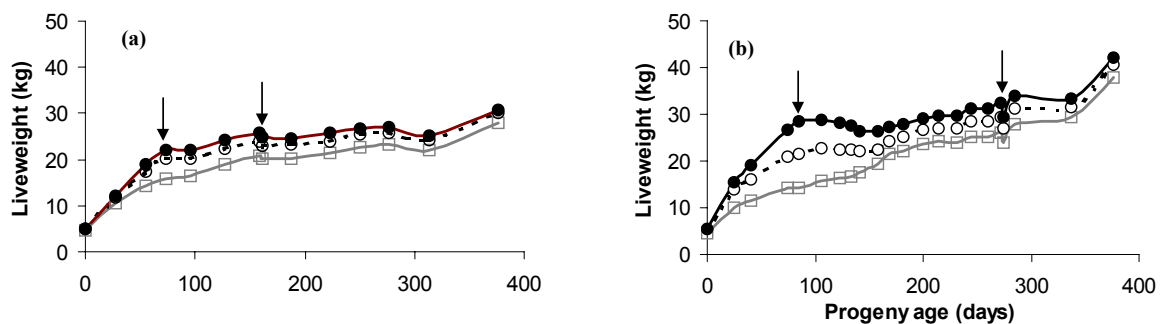


Figure 1. Liveweight of single progeny from birth until 12 months-of-age in (a) Victoria and (b) Western Australia in 2001. The progeny were born to ewes that grazed on feed on offer of 700-800 (●), 1400-1500 (○) and 3000 (□) kg DM/ha during late pregnancy and lactation (data for ewes in condition score 2 or 3 at day 90 of pregnancy were combined). Arrows denote weaning (day 80-90) and shearing.

Improving ewe nutrition to mid-pregnancy appeared to increase lamb growth rates until 12-months of age at the Victorian site, although the impacts were less than that reported by Dove *et al.* (1988), and not present at the Western Australian site. The relative effects of FOO during lactation on progeny growth rates were much greater, such that the range in liveweights at weaning between the extreme nutritional treatments was 16 to 22 kg and 14 to 28 kg at the Victorian and Western Australian sites, respectively (Figure 1). These differences still existed at 12 months of age, but were less than 3 and 4 kg at the 2 sites, respectively. Lower weaning weights were associated with significantly higher mortality until 12-months of age. Lower weights at 12-months would also be expected to influence annual fleece wool production, the proportion of animals suitable for specific markets and reproductive performance of replacement ewes. It is too early to say if lambs in this experiment that were poorly grown in early life will eventually catch up, as suggested by Allden (1968).

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