
ADULT MERINO EWES (n = 1600 AND 1400, AVERAGE LIVEWIGHT 46 AND 47 KG AND CONDITION SCORE 2.8 AND 2.7 FOR VIC AND WA SITES, RESPECTIVELY) WERE ARTIFICIALLY INSEMINATED AND THEN FED TO ACHIEVE A RANGE IN LIVEWIGHT PROFILES THROUGH PREGNANCY AND LACTATION; THE 2001 EWE LIVEWIGHT PROFILES ARE REPORTED BY FERGUSON ET AL. (2004A; THESE PROCEEDINGS). LAMBS WERE TAGGED AT BIRTH, AND THEIR SEX, BWT AND DAM NUMBER RECORDED. THE BWT AND MORTALITY (TOTAL DEATHS TO 48 HOURS) DATA FROM TWO YEARS (2001 AND 2002) FROM THE VIC AND WA SITES WERE ANALYSED SEPARATELY.

THE AVERAGE BWT OF SINGLE BORN LAMBS AT BOTH SITES AND BOTH YEARS WERE BETWEEN 4.5 AND 5.5 KG, AND MORTALITY VARIED FROM <5% TO 30%. THE BWT OF SINGLE LAMBS WERE NOT INFLUENCED BY EWE NUTRITION TO DAY 90 OF PREGNANCY AT THE VIC SITE IN EITHER YEAR OR THE WA SITE IN 2002. AT THE WA SITE IN 2001, PROGENY FROM EWES FED TO loose A CONDITION SCORE FROM JOINING TO MID-PREGNANCY WERE HEAVIER THAN THOSE FROM EWES FED TO MAINTAIN CONDITION (FIGURE 1B). AVERAGE FEED ON OFFER (FOO; KG DM/HA) BETWEEN DAY 90 OF PREGNANCY AND LAMBING EXPLAINED 35 TO 40% (P<0.001) OF THE VARIATION IN BWT IN BOTH YEARS AT THE VIC SITE (FIG. 1A), AND 57% OF THE VARIATION IN BWT AT THE WA SITE IN 2001 (FIG. 1B).

Figure 1. The influence of feed on offer from Day 90 of pregnancy to lambing and ewe condition score (CS) at Day 90 of pregnancy on the birth weight of single lambs; (a) VIC, 2001 ( ) and 2002 ( ) (CS2 and CS3 combined); and (b) WA, 2001/CS2 ( ) and 2001/CS3 ( ).

It is clear that the BWT of single lambs was remarkably resilient to all but the most severe nutritional treatments. However, changes in other progeny traits, such as wool production and quality (FERGUSON ET AL. 2004B, THESE PROCEEDINGS), may be induced at levels of maternal nutrition that do not necessarily reduce lamb BWT. There were no consistent effects of ewe condition score at Day 90 or FOO during late pregnancy and lactation on the mortality of single lambs, with the exception of the lowest FOO treatment at the VIC site. The mortality of twin lambs at the VIC site also increased dramatically when FOO was less than 1400 kg DM/ha during pregnancy and lactation (data not shown). Progeny deaths related to FOO treatments continued after weaning and had a major impact on the profitability of the different ewe feeding strategies reported by YOUNG ET AL. (2004; THESE PROCEEDINGS).


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