

LIFETIME WOOL. 15. WHOLE-FARM BENEFITS FROM OPTIMISING LIFETIME WOOL PRODUCTION

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The Lifetime Wool project aims to develop optimum management systems for breeding ewes based on an improved understanding of the impacts of nutrition on the dam herself, and the lifetime performance of the progeny. A previous analysis, based on the results of Kelly *et al.* (1996), showed the effect of varying ewe nutrition on progeny wool production could increase whole farm profit by as much as \$5 per ewe per year (Thompson and Young 2002a). This paper reports on a preliminary economic analysis of the 2001 experimental results from plot-scale research where dose-responses of wool and meat production per hectare from both the ewes and their progeny were determined.

MIDAS, a whole-farm resource-optimising model (Young 1995; Thompson and Young 2002b), has been used to determine the profitability of 5 nutritional regimes for 2 regions. Farm profitability has been calculated relative to a standard treatment. For the site in Victoria, this is a ewe in condition score 2 at day 90 of pregnancy, with 1400 kg DM/ha feed on offer during late pregnancy and lactation (CS2-1400 FOO). For Western Australia, the standard is CS2-1500 FOO. Difference in profit with each treatment (Figure 1) is presented in 3 parts: (a) change in total farm profit (\$/ewe/yr); (b) change attributable to differences in the production of the ewes and their progeny; and (c) change attributable to differences in the feed requirement of the ewes during pregnancy and lactation. Differences in the value of production arise from changes in clean fleece weight, fibre diameter and reproductive performance of the ewes the following year, and survival of the progeny to their first adult shearing. Differences in feed requirements relate to differences in stocking rate or supplementary feeding.

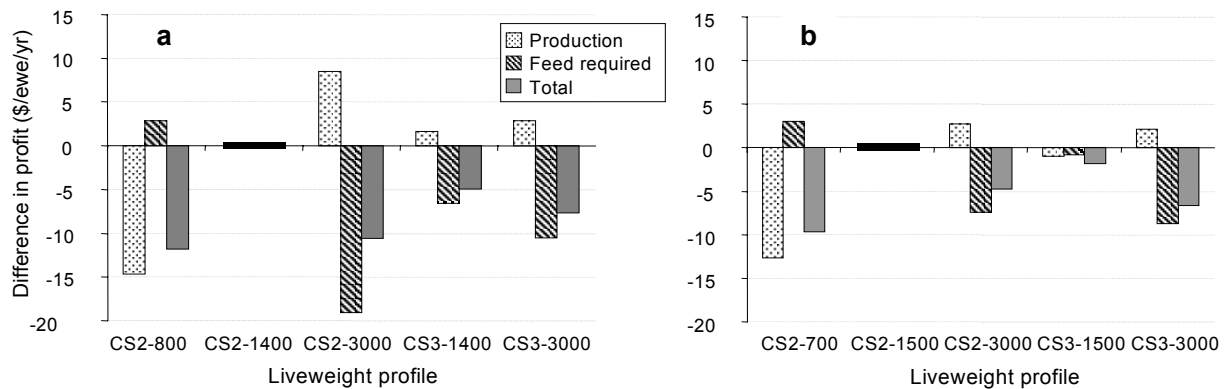


Figure 1. A summary of MIDAS output comparing the difference in whole-farm profit (\$/ewe/yr) of applying 4 of the condition score (CS) - feed on offer (FOO) treatments relative to the (a) CS2-1400 FOO treatment in Victoria and (b) CS2-1500 FOO treatment in Western Australia.

In Victoria, the CS2-1400 FOO is the most profitable strategy, being \$4.90/ewe more profitable than CS3-1400 FOO and \$7.90/ewe more profitable than CS3-3000 FOO. The high FOO treatments have a higher value of production, but this is outweighed by the cost of achieving the improved feed supply. Similarly, in Western Australia, the CS2-1500 FOO treatment is most profitable, being \$1.80/ewe more profitable than the CS3-1500 FOO. Future analyses will attempt to calculate optimum ewe nutrition strategies for farmers.

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