

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). As part of 'Lifetime Wool', treatments with varying levels of ewe nutrition at different stages of the reproductive cycle are being used to determine the dose-response of wool and meat production per hectare from both the ewes and their progeny. This paper reports on a preliminary economic analysis of the 2001 experimental results.

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 two regions. Farm profitability has been calculated relative to a 'standard' treatment. The standard for the site in southwest VIC is a ewe in condition score 2 at Day 90 of pregnancy and with 1400 kg DM/ha feed on offer during late pregnancy and lactation (CS2-1400). For the Great Southern, WA the standard is CS2-1500. Difference in profit with each treatment 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. Difference 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. Difference in the feed requirements relate to differences in stocking rate or differences in supplementary feeding.

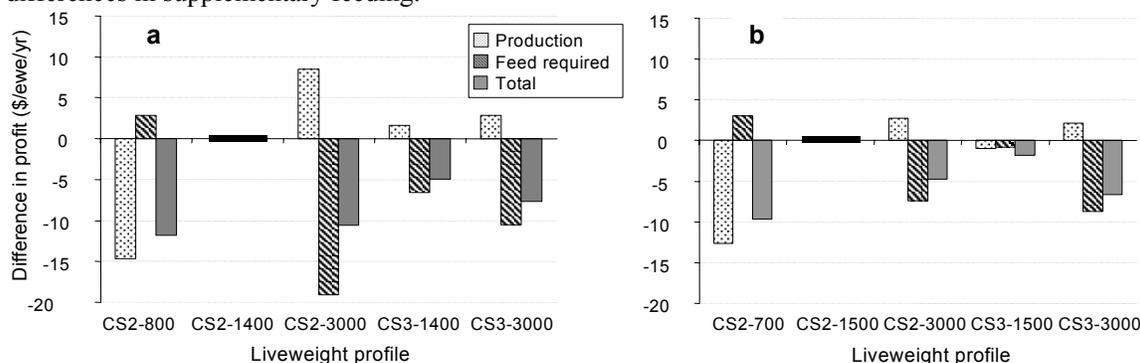


Figure 1. A summary of MIDAS output comparing the difference in whole-farm profit (\$/ewe/yr) of applying four of the condition score (CS) by feed on offer (FOO) treatments relative to the (a) CS=2-FOO=1400 treatment in Victoria and (b) CS=2-FOO=1500 treatment in Western Australia in terms of the relative level of production and its associated cost of feed.

In VIC, the 'standard' CS2-1400 is the most profitable strategy being \$4.90/ewe more profitable than CS3-1400 and \$7.90/ewe more profitable than CS3-3000. 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 WA, the CS2-1500 FOO treatment is most profitable being \$1.80/ewe more profitable than the CS3-1500. Future analyses will utilize further data generated from the project to improve the analyses and attempt to calculate optimum ewe nutrition strategies for farmers.

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