

Impacts of the Lifetime Ewe Management training program on the Australian sheep industry

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The Lifetimewool project generated new knowledge of the impacts of ewe nutrition on ewe and progeny performance. This knowledge was used to develop practical guidelines for managing Merino ewes to improve lamb marking rates, whole farm profit and animal welfare about 15 years ago (Young *et al.* 2011). These guidelines and supportive tools led producers through logical steps for making decisions on managing and feeding ewes (Curnow *et al.* 2011) and were delivered to industry via novel approaches including Lifetime Ewe Management (LTEM; Trompf *et al.* 2011). LTEM is a training course based on small groups of sheep producers that meet six times per year with a trained facilitator. During these sessions, the group visits each participating farm and learns skills in condition scoring, assessing pastures, feed budgeting and best practice ewe management. More than 4,000 sheep producers that manage more than 12 million ewes or 30% of the ewe flock in Australia have participated in the LTEM training program. About 1,000 of these producers also enrolled in a two-year version of the program. This paper reports analysis of changes in management practices and productivity of 800 producers that graduated from LTEM between 2008 and 2018.

LTEM graduates selected at random from within each group were evaluated across the 11-year period using the same telephone survey described by Trompf *et al.* (2011). The surveys captured key data relating to base-line attitudes, skills, practices and productivity for the year preceding their commencement of LTEM and again either one-year after completing the one-year version of LTEM or in the same year of completing the two year version of LTEM. Farm characteristics, production data, practices, skills and attitudes were analysed separately using General Linear Mixed Models with a logit-transformation, where appropriate, in GENSTAT (VSN International 2018). Logits were predicted as a function of LTEM participation years and graduation year and region nested within year and LTEM facilitator nested within region were fitted as random effects. Linear regression was used to model various relationships either singly or with multiple variates for the mean values of graduation years.

LTEM participants increased their stocking rate from 8.5 to 9.3 dry sheep equivalent (DSE)/ha, increased lamb-marking rate from 97.3 to 104.3% and reduced ewe mortality from 4.1 to 3.0%. A one DSE/ha increase in stocking rate between pre- and post-LTEM was associated with an increase in lamb marking rate of 6.9%. The single most important management practice relating to the impacts of LTEM on lamb marking rates was the rate of adoption of pregnancy scanning for multiples and differential management of twin ewes both pre-LTEM and due to LTEM. Adoption of this practice increased from 25% pre-LTEM to 65% post-LTEM. Eighty-six percent of the changes in lamb marking rate achieved by the different cohorts of graduates were explained by a three-variable model that included pre-LTEM adoption of pregnancy scanning and differential management of twin ewes, the change adoption of this practice due to LTEM and the number of ewes (Fig 1). This model predicted that adoption of pregnancy scanning for multiples and differential management of twin bearing ewes increased lamb-marking rates by 14%.

The scale of the stocking rate, marking rate and welfare gains achieved by participants of LTEM are unprecedented by previous extension efforts, although less than those achieved over the first three years of the program (Trompf *et al.* 2011). The gains achieved by participants of LTEM occurred despite lamb marking rates prior to LTEM increasing by about 1.3% per year across the 11 years. Logically, the increase in pre-LTEM lamb marking rate reduced the scope for LTEM to enhance marking rates, as many producers had already adopted the range of practices and principles that underpin LTEM. However, only about 25% of sheep producers currently scan for multiples and therefore LTEM should continue to have a major impact on the productivity of the Australian sheep industry.

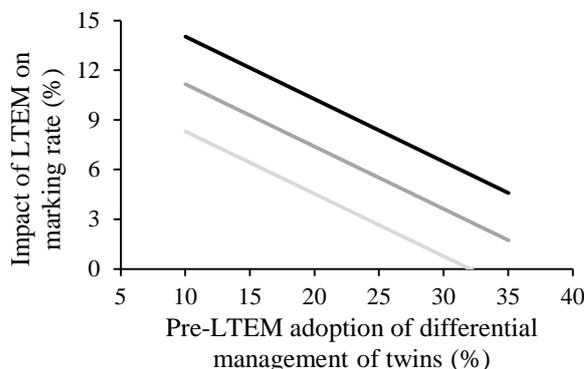


Figure 1. The effects of the proportion of LTEM participants scanning and differentially managing twin bearing ewes prior to LTEM and the change in adoption due to LTEM (0% light grey; 20% dark grey and 40% black) on lamb marking percentage. The predictions are for flocks with 3,000 ewes.

References

- Curnow M, Oldham CM, Whale JK, Gordon DJ, Rose IJ, Behrendt R, Thompson AN (2011) *Animal Production Science* 51, 851-856.
Trompf JP, Gordon DJ, Behrendt R, Curnow M, Kildey L, Thompson AN (2011). *Animal Production Science* 51, 866-72.
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