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Author:	M.L. Dever, L.P. Kahn, E.K.Doyle, S.W. Walkden-Brown
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Effect of ewe worm control on meat-breed lamb performance up to weaning

M.L. Dever*[1,2], L.P. Kahn[2], E.K.Doyle[1], S.W. Walkden-Brown[1]
[1] Cooperative Research Centre for Sheep Industry Innovation (Sheep CRC), University of New England, Armidale, NSW, 2351, Australia
[2]Animal Science, School of Environmental and Rural Science, University of New England, Armidale, NSW 2351, Australia
*Corresponding Author: mdever2@une.edu.au

Gastrointestinal nematodes (worms) are a significant financial constraint for the Australian sheep industry with 87% of the total cost of worms attributed to production losses (Sackett et al., 2006). Research into the effects of worms on sheep has primarily focused on Merinos with few research publications for prime lamb production. Carmichael (2009) reported that reduced lamb growth rate was the most significant contributor to worm related production losses for prime lamb production systems in southern Australia.

This experiment investigated the effects of ewe worm control on growth of their meat-breed lambs up to weaning for two distinct worm control management systems on the Northern Tablelands, NSW. The experiment was a 2x2x2 factorial design with 2 levels of worm management (best practice worm management (LTL) and typical regional worm management (TYP)), 2 levels of worm control in ewes (worm-suppressed (SUP) and non-suppressed (NSUP)) and 2 levels of worm control (SUP and NSUP) in their lambs. Two mobs of 120 twin-bearing Border Leicester x Merino ewes and 120 Poll Dorset x Border Leicester/Merino lambs were used on 3 LTL and 2 TYP farms. Half the ewes in each mob were randomly allocated to become SUP or NSUP. At lamb-marking, lambs from each ewe worm control group were randomly to be SUP or NSUP. SUP ewes were serially treated with persistent and short-acting anthelmintics at 80–90 day intervals. SUP lambs were administered a similar anthelmintic regimen at 6 and 10 weeks of age. NSUP lambs did not receive any treatments. Both SUP and NSUP ewes and their lambs grazed together. The effect of ewe worm control on the performance of meat-breed lambs for the 6 month period from 6 weeks pre-lambing (July) to weaning (January) is reported. Over this period, NSUP ewes on LTL and TYP farms were administered 3 and 4 anthelmintic treatments respectively. The cost of worms is defined as the difference in bodyweight between SUP and NSUP.

Worm egg counts (WEC) for LTL and TYP ewes were 284 and 40 epg ($p<0.001$) at pre-lambing, 1088 and 1526 epg ($p<0.03$) at lamb-marking and 1261 and 892 epg ($p<0.001$) at weaning. Mean WEC for NSUP lambs on LTL and TYP farms were low in November (0 epg) and <260 epg at weaning with no effect of ewe worm control ($p=0.89$). The cost of worms for LTL ewes was 2.2 kg ($p=0.014$) with the majority of this cost (64%) occurring pre-lambing. The cost of worms for TYP ewes was 0.6 kg (not significant) and all of this cost occurred post-lambing. Lambs reared by NSUP ewes on LTL farms were 1.6 kg lighter ($p=0.004$) at weaning than lambs reared by SUP ewes. In contrast, lambs reared by NSUP ewes on TYP farms were only 0.1 kg lighter at weaning which was not significant.

The cost of worms is shown to be greater on LTL farms and is most likely due to a major drought feeding program which occurred on one of the TYP farms as well as TYP farms having a stocking rate 30% lower than LTL farms. A second year of data is being collected to clarify these differences and to determine production per hectare for each worm control management system.

Carmichael, I. (2009). *Parasite control in southern prime lamb production systems*. Meat & Livestock Australia Limited.
Sackett, D., Holmes, P., Abbott, K., Jephcott, S., & Barber, M. (2006). *Assessing the economic cost of endemic disease on the profitability of Australian beef cattle and sheep producers* (pp. 119). Meat and Livestock Australia Limited.