

EFFECT OF HELMINTH INFECTION AND NUTRITIONAL FACTORS ON GROWTH OF LAMBS AND WOOL PRODUCTION OF EWES.

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Provision of pastures relatively free of helminth infection for spring lambing is difficult, but their potential benefits to ewes and lambs before weaning have yet to be assessed under Australian conditions.

Cross bred ewes mated to lamb in spring were allocated to replicated phalaris - subterranean clover pasture plots. The following treatments were applied in a-factorial arrangement: 1. A single pre-lambing drench given to ewes lambing on lightly contaminated pasture (low-level parasitism) v. undrenched ewes lambing on more heavily contaminated pasture (uncontrolled parasitism). 2. Ten v. 15 ewes and their lambs ha-1. 3. Superphosphate 100 kg/ha v. no fertilizer.

TABLE 1: Ewe liveweight gains from lambing to weaning/and fleece weights at weaning (kg).

	Worm Infection			Stocking Rate			Fertilizer		
	-	+	P	H	L	P	-	+	P
Liveweight Gain	2.5	1.1	.14	.01	3.5	.002	1.5	2.1	.48
Fleece Weight	3.55	3.12	.0009	3.25	3.41	.13	3.25	3.41	.13

The effect of the parasite treatment on lamb growth was small, and 'significant only in twins during the last 2 months before weaning. Ewe liveweight gains were greater at the low than the high SR with no significant effects of parasite treatment or fertilizer. However, the parasite treatment produced a highly significant effect on ewe fleece weight at weaning which did not interact with SR or' fertilizer. If we assume that ewes grew roughly 1/3 of their total fleece weight in the 4 months between lambing and weaning, the extra 0.43 kg produced by ewes drenched and lambing on lightly infected pastures represents at least 30% more wool grown at the low-level of parasitism than at the uncontrolled level of parasitism.

The largest difference in parasite infection between treatments was the low level of exposure to Trichostrongylus infection which was very low but not zero, in the low-level treatment. Barger & Southcott (1975) showed reduced wool growth in resistant adult Merino wethers given only moderate artificial infections with T.colubriformis. They concluded that this was probably an unavoidable cost of parasitism to wool production since its avoidance would require virtually worm-free pastures. This conclusion is not necessarily true for the more susceptible lactating ewe where useful effects on wool growth might be achieved without the necessity to reduce pasture infectivity to impracticably low levels. Further studies are in progress to isolate the effects of pre-lambing drenching and the rate of reinfection on wool growth of ewes, and to explore procedures for reducing the infectivity of pastures used for lambing.

Barger, I.A., and Southcott, W.H. (1975). Aust.J.exp.Agric.Anim.Husb. 15:167.

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