

EFFECT OF NUTRITION DURING AUTUMN-WINTER ON PERFORMANCE
OF EWES AT JOINING THE FOLLOWING NOVEMBER-DECEMBER

P.A. KENNEY* and G.B. ROBERTS*

In flocks in south-eastern Australia it is common for ewes to fail to conceive for two to three months after joining in November-December. While this seems to occur at random on different farms it has been more prevalent following dry autumn-winter periods (Kenney personal observation). Further, both Smith (1962) and Fletcher (1974) showed that some effects of nutrition on reproduction only become apparent some months after differential treatments have ceased. This experiment examined the effect of nutrition during lambing in autumn-winter on mating and lambing in the following 12 months.

In mid-April 1978, a flock of Border Leicester x Merino ewes due to lamb in May were divided at random into five groups of 40 ewes. Groups were fed differently until six weeks after lambing. One group was allowed to graze green pasture, while the rest were placed on bare plots about 2 ha in area and fed hay (2-3 kg/day) alone or with a supplement of oats, wheat or lupins at 300 g/day. Supplements were fed to ewes individually from two weeks before expected lambing dates. All five groups were grazed together at pasture after early July when differential treatments had ceased. Ewes were joined with rams the following November-December and records taken at their subsequent lambing.

TABLE 1 Effect of treatments on live weights and dates of mating and lambing

Treatments	Live weights (kg)		First Mating		Lambing	
	July	November	Date	SE(days)	Date	SE(days)
PASTURE	67	65	29/11	1.5	29/4	1.7
HAY FED - no supplement	44	59	10/12	1.6	8/5	1.7
- oats	49	61	29/11	1.5	3/5	1.6
- wheat	47	61	2/12	1.6	30.4	1.7
- lupins	48	60	28/11	1.5	29/4	1.4

Ewes on the plots were 18-23 kg lower in live weight than were those fed pasture after only 2½ months of feeding. Ewes fed hay and no supplement mated and lambed later than ewes in other groups ($P < 0.05$). The proportion of dry ewes among ewes fed hay was not affected by feeding oats or wheat ($\chi^2 = 0.37$, $P > 0.05$) but there was a smaller proportion of dry ewes among those grazing pasture and those fed lupins than in the other three groups (0.07 cf 0.34 respectively; $\chi^2 = 9.9$, $P < 0.05$).

The results from this experiment indicate that poor nutrition of ewes at lambing in autumn-winter appears unlikely to cause more than one or two weeks delay in mating in the following November-December but it may result in a considerable increase in numbers of dry ewes when joining does not continue after December. As the reproductive performances of two groups of ewes which were different in live weight by 19 kg immediately after treatment were similar, we suggest that the observed responses in reproductive performance were due to factors in the diet other than the level of metabolizable energy during lambing.

FLETCHER, I.C. (1974). *Proc. Aust. Soc. Anim. Prod.* 10: 261.

SMITH, I.D. (1962). *Aust. Vet. J.* 38: 338.

* Department of Agriculture, Rutherglen Research Station, Rutherglen, Vic. 3685.