

USE OF CEREAL-LUPIN GRAIN MIXTURES IN DROUGHT FEEDS FOR LAMBING EWES

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The introduction of sweet lupins (*Lupinus angustifolius*) as a crop has provided many farmers with another grain for feeding sheep. The main advantage of lupins over wheat and oats appears to be a higher protein content, but the higher price of lupins is likely to limit their use to areas of particular need such as the feeding of lactating ewes during drought. This experiment examined the value of lupin grain as a supplement to oats and wheat in drought feeding of lambing ewes.

Two flocks of Border Leicester x Merino ewes (forming two replicates) with about 270 ewes in each, were grazed together on restricted dry pasture following mating in December, and were introduced to oats and wheat grain one month prior to lambing in May. Two weeks before their expected lambing date they were given full experimental rations which continued till nine weeks after lambing. Wheat and oats were fed with 0, 15, 30, 45 and 60% lupin grain. This gave 20 groups: 2 replicates x 2 grain x 5 lupin levels. Rations, which included hay, were fed at rates recommended by Oddy (1978) and levels were adjusted daily for each group according to the stages of breeding of the ewes in the group. All grains were assumed to have the same metabolizable energy per kg as wheat.

TABLE 1 Details of ewe productivity

Measurement†	Lupin grain (%)					Residual SD
	0	15	30	45	60	
Lamb survival (per lamb born)	0.55	0.68	0.77	0.77	0.80	0.09
Ewe survival (per lambing ewe)	0.92	0.97	0.95	0.98	0.98	0.04
Lactating ewes (per lambing ewe)	0.67	0.75	0.78	0.86	0.86	0.07
Lamb live weight (kg)	10.8	12.6	13.9	13.7	14.3	0.08
Fleece weight (kg)	3.33	3.53	3.59	3.73	3.70	0.09

† All nine weeks post lambing, except fleece weight

The results were similar ($P > 0.05$) with wheat and oats, and results for both grains are combined in Table 1. Animal performance improved substantially with proportion of lupins up to 30% but above this level there was little further improvement. As these responses did not differ between wheat and oats which had 13 and 8% crude protein respectively, it is unlikely that the effect of lupins was due only to an increase of crude protein. It may have been a result of lupin protein escaping fermentation in the rumen (Hume 1974).

It is clear that there is considerable merit in replacing up to 30% of wheat and oats with lupins in currently recommended drought rations for lambing ewes.

HUME, I.D. (1974). Aust. J. Agric. Res. 25: 155.

ODDY, V.H. (1978). "Feed requirements of sheep and cattle during drought using a metabolizable energy system". Dept. of Agriculture, N.S.W.

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