

BODY COMPOSITION OF LAMBS FED PELLETTED DIETS CONTAINING
VARYING LEVELS OF FISHMEAL

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Numerous reports record growth responses by lambs to protein supplements but ignore the composition of the additional growth (eg. Kempton and Leng 1979). Others have shown that increasing the protein portion of energy intake will reduce carcass fatness in early weaned lambs (Andrews and Orskov 1970). However, this effect decreases as live weight increases (Andrews and Orskov 1970) and hence protein requirements decrease (Black 1974). This experiment examined the effect of increasing dietary protein, with fishmeal (FM, low rumen degradability), on the carcass fatness of lambs weaned at about 3 months of age and slaughtered at 34-44 kg live weight.

Recently weaned Dorset x (Border Leicester x Merino) wether lambs (21.8±2.11 kg) were individually fed ad lib. pelleted diets for a 10 wk period. The diets were based on a basal mix (2.1% N) of wheat, oat chaff and mineral/vitamin premix in the proportions of 766, 200 and 14 g/kg respectively. To this basal mix, 20 g urea/kg was added (to ensure adequate soluble N), together with FM at 0-20% (5 levels). The body composition of 35 lambs (mean intakes 1000-1325 g/d) was then compared with 15 lambs (10.6±1.23 kg carcass weight) slaughtered at the start of the experiment.

There were no significant effects of FM inclusion in the diet on the growth rate (226±40.6 g/d), feed intake (1140±86 g/d) or cold carcass weight (19.6±1.89 kg) of these lambs.

TABLE 1 Changes in fatness of lambs fed diets of varying fishmeal content

	% fishmeal in the diet					Diet Effect
	0	5	10	15	20	
Total fat (g) - carcass ⁺	3383	4399	4378	4133	4432	*
- non carcass	1561	1491	1340	1407	1427	ns
Subcutaneous fat (g) ⁺	2229	2626	3132	2437	2500	*
Kidney and channel fats (g)	467	455	417	388	313	*

⁺ means adjusted for significant intake effect; * P<0.05; ns, not significant

Although the inclusion of FM did not improve the growth performance of these lambs, there was an increase in the fat content of the carcass (Table 1) but not in the non-carcass tissue. The increase in carcass fatness found with protein addition to the diet, emphasises the importance of considering the body composition of growth in nutrition studies, including the distribution between carcass and non-carcass components.

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