

FEED CONVERSION EFFICIENCY IN SHEEP AND GOATS FED ON A HIGH ENERGY DIET

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Efficiency of food conversion has been simply defined as a ratio of 'output' per unit of 'input'. The composition of the mass gained and consumer preference are often taken into account in selecting the animals for meat production. Goats are often described as leaner animals, because of their relatively low body fat content, than sheep which contain a substantial amount of fat. The differences in body composition between sheep and goats may be partly attributable to their feeding habits, as the goats tend to prefer to browse (Devendra 1978).

The relative efficiency of sheep and goats on a uniform high energy diet was examined in the experiment described here. Six Merino wether sheep (age: 1½-2 yrs, Bwt: 42.5±0.7 kg) and six Angora x feral wether goats (age: 1½-2 yrs, Bwt: 26.3±0.9 kg) were housed indoors in individual pens. They were offered daily, a high energy pellet diet (60 parts Barley + 40 parts Lucerne) ad lib. for 10 weeks, with water available at all times. Tritiated water spaces were determined in all the animals before and after the 10 week experimental period. Body composition was estimated using the prediction equations of Searle (1970). Water turnover rates were measured during the 5th week. Results are summarised in Table 1. Table 1: Body weight gain, feed conversion efficiency, water turnover and composition of gain in sheep and goats fed on a high energy pellet diet; mean ± SEM.

	Sheep	Goats
Body mass (BM) gained (kg)	11.6 ±1.4*	5.54±1.6
Total dry matter intake (DMI) (kg)	76.93±2.5*	43.35±4.7
Feed conversion efficiency		
BM gained g/DMI (kg)	150.0 ±13.5	134.1 ±33.1
Composition of gain - fat (%)	56.3 ±2.9*	27.3± 4.3
- protein (%)	9.7 ±0.4*	12.3± 0.5
Water turnover rate)		
ml/kg 0.82/day)	129.1±13.9*	72.8± 13.4
*Significantly different (P<0.01)		

On a high energy diet sheep gained more body mass than goats but also consumed more feed. The resultant feed conversion efficiency was not different from goats. Goats had a lower intake of water than sheep and the ratio of water (l) to DMI (kg) (goats: 1.4±0.25, sheep: 2.4±0.25) was also significantly lower. In spite of similar gross feed conversion efficiencies, goats gained relatively less fat and more protein than sheep and could therefore be economic not only in their more usual extensive management but also under conditions of intensive husbandry.

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