EFFECTS OF BENTONITE AND MAIZE SUPPLEMENTS ON PRODUCTION OF WOOL IN SHEEP

R.J. Forster* and R.A. Leng*

The use of bentonite to increase wool growth in sheep was first reported by Leng (1983). Further studies have demonstrated that the supplementation of bentonite to sheep in their drinking water increased wool growth by 17% in faunated sheep grazing good quality pasture (Fenn and Leng, 1988). However, recent research in Western Australia did not find increases in wool growth when bentonite was included in a good quality pelleted diet or when added to a chaffed wheat straw diet (J.B. Rowe. pers. comm.).

The present study was designed to determine the effect of bentonite and maize supplementation of straw based diets. Sheep were assigned to a diet consisting of 84% wheat straw (C) or 54% wheat straw and 30% cracked maize (M). Each diet was supplemented with 10% cottonseed meal and 6% urea/mineral mix (2.5% dried molasses, 1.5% urea, 2% minerals/vitamins). Bentonite ("Trufeed MW", Cudgen RZ Pty. Ltd., Brisbane) was supplemented to half the sheep in the drinking water at a rate of 15g/l.

TABLE 1. The effects of bentonite and/or maize supplements on wool growth

	Basal		Maize	
	Water	Bentonite	Water	Bentonite
No. of animals	6	6	6	7
DM intake (g/d)	612	675	871	905
Water intake (l/d)	1.2	1.4	1.4	1.5
Rumen NH_3 (mg/l) (pre-feeding)	108	92	105	122
Rumen NH_3 (mg/l) (4 h)	344	207	294	284
Liveweight gain (g/d)	15	38	95	102
Greasy wool growth ($g/m^2/d$)*	6.3	7.8	14.1	18.4
Clean wool growth ($g/m^2/d$)*	5.0	6.3	10.6	13.2

* Adjusted mean using pre-treatment wool growth as a covariate.

Supplementation with bentonite tended to increase wool growth on the basal diet ($p<0.1$) and significantly increased wool growth on the maize supplemented diet ($p<0.03$). Increases in wool growth attained were between 24 and 30%. Bentonite did not affect liveweight gain on the maize supplemented diet but tended to increase growth when the basal diet was fed ($p<0.1$). Pre-feeding levels of rumen NH_3 were not different, however 4 h after feeding the level of NH_3 on the basal diet was significantly decreased when bentonite was supplemented. These results indicate that bentonite has the potential to increase the growth of wool on supplemented straw diets.

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*Department of Biochemistry,Microbiology and Nutrition, University of New England, Armidale, NSW, 235 1, Australia