

EFFECT OF BENTONITE ON DIGESTION OF PASTURE

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Sodium bentonite** (NaB) as a supplement to pasture fed dairy cows was found to decrease milk protein yield (Moate and Rogers 1985). This effect was associated with a decrease in pasture intake but no change occurred in rumen pH or rumen fluid concentrations of ammonia and volatile fatty acids. A concurrent study examined the effects of NaB supplementation on the digestion of pasture. Wether sheep (40 +/- 3 kg LW) were offered limited pasture (4.0 kg fresh weight) with or without 60 g of NaB daily. The pasture was the same as that offered to the cows in the above experiment (DM % 18.7; N % 1.7%; Soluble carbohydrate 13.1%; Ca % 0.49; Mg % 0.17). Bentonite contained 0.4 mg/g Ca and 0.5 mg/g Mg.

The effect of bentonite supplementation on apparent digestibility of pasture.

	CONTROL	BENTONITE 60 g/sheep/day	L.S.D. P=0.05
Number of sheep	8	8	-
Dry matter intake (g/sheep/day)	724	747	25
Apparent Pasture DMD (%)	69.1	68.8	1.7
Apparent Pasture OMD (%)	70.8a	68.5b	1.8
Apparent N digestibility (%)	50.6	48.5	5.0
Urine N (g/sheep/day)	7.19	6.20	1.57
N retention (g/sheep/day)	-0.77	0.21	1.85
Apparent calcium absorption (%)	35.0a	26.3b	6.0
Apparent magnesium absorption (%)	35.3a	15.9b	6.9

Means within a row followed by different letters are significantly different (P=0.05).

The effect of NaB on N utilization in this study with pasture of low N content was small and non-significant and would be unlikely to influence animal production. Reduction of organic matter digestibility by NaB confirms other observations (Fisher and Mackay 1985). The marked depression in apparent calcium and magnesium absorption is explicable in terms of the cation exchange properties of NaB (Rindsig and Schultz 1970). These factors may be associated with the decreased voluntary intake of dairy cows supplemented with NaB (Moate et al. 1985). These observations indicate that it may be necessary to add calcium and magnesium to diets containing NaB.

FISHER, L.J. and MACKAY, V.G. (1985). Can. J. Anim. Sci. 63 : 939.

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** Sodium Bentonite (Cudgen R.Z. Pty. Ltd., Brisbane)