

## EFFECT OF A DECREASE IN PALATABILITY ON VOLUNTARY INTAKE OF A FORAGE BY SHEEP

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The relationship between palatability and long-term intake of a forage by ruminants is equivocal (Gherardi et al. 1987). Because forages of different palatability may also vary in other characteristics that affect rumen function and voluntary feed intake, it is desirable to investigate the relationship by changing the palatability of a single feed. By using short-term preference tests, Gherardi and Black (1986) showed that it was possible to increase or decrease the palatability of a wheaten hay by treating it with respectively; (i) a solution of butyric acid (BA) and monosodium glutamate (MSG) or (ii) magnesium oxide (MgO). This experiment investigates the effect of MgO treatment on the dry matter intake (DMI) of a wheaten hay when offered alone (experiment 1) or simultaneously in separate containers with the untreated hay (experiment 2).

Six mature cross-bred sheep fitted with rumen and abomasal cannulae were offered to appetite over a 24 d period, a wheaten hay chopped to 6 mm lengths. Experiment 1 had a balanced change-over design (Patterson and Lucas 1962) and examined the effects of three treatments over four periods; A, hay sprayed with a 1% w/w casein solution (CS) (123 g/kg air dry hay); B, hay sprayed with CS (123 g/kg), with the addition of MgO (40 g/kg); C, hay sprayed with CS (123 g/kg), with amounts of MgO equivalent to treatment B infused into the rumen. In experiment 2, treatments A and B were offered simultaneously in separate containers. Treatments A and B were also offered in short-term preference tests before each period.

Effect of MgO treatment on DMI by sheep

Treatment	Experiment 1		Experiment 2		
	DMI (g/d)	SEM	DMI (g/d)	SEM	Preference (%)
A	1329	±38	1189	±101	77
B	1255	38	353	82	23
C	1260	38			

NS, Not significantly different; \*\* P&lt;0.01

The addition of MgO resulted in a strong decrease in the short-term preference for the treated hay relative to the untreated hay (17 cf. 83%) when expressed as a percentage of the total intake. This decrease in short-term preference was not reflected in a significant decrease in long-term DMI when the diets were offered alone (experiment 1). However, when the MgO treated hay and untreated hay were offered simultaneously (experiment 2) there was a strong rejection of the MgO treated hay (23 cf. 77%). Although there was no significant effect of MgO treatment on the DMI of a hay when offered alone, the less palatable feed was strongly rejected when the sheep were given a choice, as would occur in the grazing situation.

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