THE SUBSTITUTION EFFECT OF ROLLED BARLEY FED TO COWS GRAZING RYEGRASS AND CLOVER

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Twenty-one Holstein Friesian cows were allocated to three groups balanced for milk yield, age and stage of lactation. Each group was offered a fresh strip of perennial ryegrass/white clover pasture once daily, with sufficient to ensure that pasture mass did not restrict intake. Rolled barley was individually offered in equal amounts twice daily at 0, 4 and 8 kg/day. Pasture mass before and after grazing was estimated by an electronic probe which was calibrated daily. Substitution rate was calculated as kg dry matter (DM) reduction in pasture intake per kg DM barley eaten.

	Rolled barley offered (kg/day)			SEM
	0	4	8	
Pasture mass before grazing (kg DM/ha)	5095	5130	5136	35.7
Pasture mass after grazing (kg DM/ha)	3408	3701	3789	74.8
Pasture intake (kg DM/cow/d)	13.6	11.5	10.3	0.35
Barley intake (kg DM/cow/d)	0.0	3.6	6.7	0.09
Total intake (kg DM/cow/d)	13.6	15.1	17.0	0.28
Substitution rate	-	0.60	0.48	

There was a progressive reduction in pasture intake and increase in total intake as barley intake increased. The substitution rate did not differ over the range of barley weights offered. The digestibility of the pasture was high (DOMD 67%) and the substitution rate much lower than expected (SCA 1990). The low substitution rate was associated with negligible perturbation of rumen pH and pattern of rumen fermentation.

SCA (1990). 'Feeding standards for Australian livestock, Ruminants'. J.L.Corbett (Convenor), Standing Committee on Agriculture. (CSIRO: Melbourne).

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