

**THE COMPARATIVE INTAKE AND DIGESTION OF HERBAGE DIETS
BY WEANER AND MATURE SHEEP**

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Graziers in southern Australia are aware of the need to provide preferential nutrition for weaner sheep during summer and autumn when pastures are dry. To examine the possibility that digestive efficiency may vary with $^{0.75}$ Weston and Margan (1979) fed a high quality clover diet at 82 - 88 g/kg $^{0.75}$ to lambs at 18, 29 and 44 kg average live weight. They found small differences in digestion and absorption of nutrients attributable to age and body size. The present experiments compared mature (M) Merino wethers of 40 - 45 kg live weight and weaner (W) Merino wethers of 18 - 22 kg offered three herbage diets *ad lib*.

The diets used were: High Quality, subterranean clover hay (2.8% N, 37.2% cell wall contents); Medium Quality, wimmera ryegrass hay (0.7% N, 70.4% cell wall contents); Low Quality, mature grass-clover mixture (1.2% N, 75.8% cell wall contents). All diets were chopped and offered once daily at 30% above appetite. A group of eight mature wethers was used throughout but the eight weaners were replaced before feeding the low quality diet. The results are summarized in table 1.

TABLE 1 Organic matter intake (g/kg $^{0.75}$ /day), organic matter digestibility (%), nitrogen retention (g/100 g DOMI) and wool growth (mg/100 cm²/day) of mature wethers (M) and weaner wethers (W) fed three roughage diets

	High quality			Medium quality			Low quality		
	M	W	diff.	M	W	diff.	M	W	diff.
Organic matter intake	57.5	68.6	**	43.0	42.3	N.S.	34.4	37.1	N.S.
Organic matter digestibility	71.5	70.9	N.S.	58.5	59.5	N.S.	44.2	45.3	N.S.
Nitrogen retention	0.82	0.97	N.S.	-0.11	-0.22	N.S.	-0.74	-1.45	**
Clean wool growth	106	90	N.S.	66	42	N.S.	63	19	**
			** P<0.01				N.S. P>0.05		

Within each diet, both ages of sheep gave similar estimates of organic matter digestibility. Organic matter intakes (g/kg $^{0.75}$) were also similar between age groups except on the high quality diet where weaners ate about 20% more than the mature wethers.

As the quality of the diet was reduced, the weaners retained progressively less nitrogen than the mature wethers and their wool growth declined sharply. Several weaners died while receiving the low quality diet and post-mortem data indicated a failure of normal rumen function.

The results do not indicate differences in organic matter digestion between mature and weaner sheep, but the retention of nitrogen by the latter group may be impaired on poor quality diets.

WESTON, R.H. and MARGAN, D.E. (1979). *Aust. J. Agric. Res.* 30: 54.

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