

INTAKE AND DIGESTION OF HERBAGE DIETS BY ANGORA GOATS AND MERINO SHEEP

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In reviewing the available information, Devendra (1978) concluded that goats digest cellulose more efficiently than do sheep. However, most of the data reviewed related to tropical and arid zone vegetation. To obtain information on this point with temperate pasture species, the experiment described here compared the utilization of three hay diets by Angora goats and Merino sheep.

Three wether sheep (40-45 kg) and three wether goats (33-36 kg) were offered the following diets once daily at 30% above appetite: Diet 1 - chopped subterranean clover hay (2.8% N, 38.2% cell wall constituents); Diet 2 - chopped wimmera ryegrass hay (0.7% N, 71.6% cell wall constituents); and Diet 3 - chopped mature grass-clover hay (1.1% N, 75.8% cell wall constituents). Each diet was fed for a five-week period. The fourth week of each period comprised a nitrogen balance and digestion trial, and the mean rumen retention time of ^{103}Ru -phenanthroline was calculated from faecal excretion data in the fifth week. Results are summarized in Table 1.

TABLE 1 Organic matter intake ($\text{g/kg}^{0.75}/\text{day}$), organic matter digestibility (%), cell wall digestibility (%), mean rumen retention time (h) and nitrogen retention ($\text{mg N}/100 \text{ g}$ digestible organic matter intake) of Angora goats and Merino sheep fed three hay diets

Diets	Species	Diet No.			L.S.D. ($P < 0.05$) within columns
		1	2	3	
Organic matter intake	Goats	67.6	45.5	34.6	24.6
	Sheep	60.7	48.0	34.1	
Organic matter digestibility	Goats	72.1	64.9	49.5	4.2
	Sheep	71.3	57.3	45.6	
Cell wall digestibility	Goats	68.8	67.4	54.0	6.8
	Sheep	67.4	58.9	51.1	
Mean rumen retention time ^{103}Ru -phen.	Goats	17.1	29.1	25.9	6.2
	Sheep	13.9	20.5	20.4	
Nitrogen retention	Goats	673	-87	-246	463
	Sheep	794	-200	-813	

Intake ($\text{g/kg}^{0.75}$) did not differ between the species but the digestibilities of organic matter and cell wall material were higher ($P < 0.05$) in goats. These advantages were most pronounced on the poorer quality diets (Table 1) and were due in part to longer ($P < 0.05$) retention times of digesta in the reticulo-rumen, as indicated by the marker.

The goats retained more nitrogen per 100 g digestible organic matter intake on the poorest diet. However, more information is needed on the relative conversion efficiencies of feed of these species.

DEVENDRA, C. (1978). Wld. Rev. Anim. Prod. 14: 9.

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