

THE NUTRITIVE VALUE OF MATURE SUBTERRANEAN AND PERSIAN CLOVER FOR SHEEP

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The nutritive value of subterranean clover (*Trifolium subterraneum*) declines substantially during the summer months in southern Australia, limiting production during this period (Ison and Ampt 1992). Persian clover (*T. resupinatum* cv. Maral) was found to be superior to subterranean clover in terms of liveweight gain and wool production during the summer (Kenny and Reed 1984). In the present experiment mature subterranean clover (cv. Junee) was compared with mature herbage from 2 Persian clovers (cv. Maral and Kyambro). Maral belongs to *T. resupinatum* var. *majus* and is larger and softer seeded with thicker stems and larger inflorescences than the *T. resupinatum* var. *resupinatum* types of Persian clover to which Kyambro belongs. All 3 were harvested in January 1993.

The 3 legumes were fed *ad libitum* to 3 groups of 4 mature wethers in metabolism crates. After a 13 day adaptation period feed intake was measured and faeces and urine collected for 7 days. Microbial crude protein (MCP) production was estimated from urine output of allantoin (Chen and Gomes 1992).

Intake of dry matter (DM) and digestible organic matter (DOM) was higher with Maral than with Junee ($P < 0.05$). The content of DOM in dry matter (DOMD) was lower with Maral than with the other 2 legumes although these differences were smaller and not significant ($P > 0.05$) when adjusted for DM intake (Table 1). These observations suggest that rate of passage through the alimentary tract was faster with Maral, and this is normally associated with greater efficiency of microbial growth in the rumen. However, MCP production did not differ significantly ($P > 0.05$) between the legumes. These results suggest mature Maral Persian clover would promote greater wool production and liveweight gain of sheep during the summer months than mature Junee subterranean clover-

Table 1. Dry matter (DM) intake, digestible organic matter (DOM) intake, digestible organic matter in dry matter (DOMD) and microbial crude protein (MCP) yield in sheep fed a diet of mature subterranean clover (cv. Junee) or mature Persian clover (cv. Maral or Kyambro)

	Junee	Diet Maral	Kyambro	SEM
DM intake (g/day)	667 ^a	919 ^b	794 ^{ab}	63.9
DOM intake (g/day)	302 ^a	400 ^b	326 ^{ab}	31.4
DOMD (%)	47.7 ^a	42.0 ^b	47.1 ^a	1.25
Adjusted DOMD (%) ^A	45.8	44.0	47.1	1.32
MCP (g/kg DOMI)	115	122	111	9.2

^AAdjusted to mean DM intake.
Means with different superscripts within a row differ significantly ($P < 0.05$).

CHEN, X.B. and GOMES, M.J. (1992). Occasional Publication (International Feed Resources Unit, Rowett Research Institute: Aberdeen).
ISON, R.L. and AMPT, P. (1992). *Agric.Syst.* 38: 363-86.
KENNY, P.T. and REED, K.F.M. (1984). *Aust. J. Exp. Agric. Anim. Husb.* 24: 322-3 1.