

Supplementing Kacang goats with urea mineral molasses blocks (UMMB) during the dry season in West Timor

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Bali cattle and goats are important income sources for smallholder farmers in West Timor. Supplementary feeding however, has not been widely adopted, probably because of the costs of supplements. To increase the rate of adoption of this technology and to test two types of urea mineral molasses blocks (UMMB1 from Java and UMMB2 from Timor), an on-farm research study was conducted from September to December 2004 using 180 goats (of varying ages and sex) and involving 22 goat owners in two districts in the South–Centre–Timor Regency. Control animals were owned by people within the same village whose goats had access to identical feed resources outside the night shelter/fences as the supplemented goats. Animals were allotted into a completely randomized design with 3 treatments (Control, UMMB1, and UMMB2) and 4 replications for each age group. Data were analysed using analysis of variance.

Intake of the blocks was monitored at 1700 h when all animals were back in their respective enclosures after spending the day feeding freely on grasses and fodders in the yards and around the farms. Only a small number of goats were tethered at night. To gain farmer support, they were given the blocks at no cost and owners of the control animals were given incentives to retain rather than sell or kill their goats during the study. Liveweight gain and nematode egg counts were monitored every two weeks.

There was a reduction of faecal egg counts

from about 300 eggs/g faeces at the start to less than 40 eggs/g at the end of the study, supporting previous findings that UMMB can reduce internal parasite burdens in small ruminants on low digestibility diets (Knox *et al.* 1996).

Liveweight gains of goats supplemented with UMMB1 or UMMB2 did not differ ($P>0.05$; Table 1). Adult and young male goats supplemented with the blocks gained weight significantly faster ($P<0.05$) than control animals (Table 1), suggesting that the blocks will make a significant improvement to goat production during the dry season when fodder supplies are limited in quantity and quality.

During the study, the farmers participated actively and were very interested in testing and using UMMB2 because the ingredients were readily available locally and relatively inexpensive. It can be concluded that supplementary feeding using either type of UMMB can improve animal production and reduce internal parasite burdens and remain one of the appropriate technologies available for Timorese farmers. However, for farmers in Timor, a ‘strong push’ from the local authorities is needed to demonstrate the potential economic benefits and to achieve adoption.

Knox, M. and Steel, J. (1996). Nutritional enhancement of parasite control in small ruminant production systems in developing countries of south–east Asia and the Pacific. *International Journal for Parasitology* 26, 963–970.

Table 1 The dry matter (DM), crude protein (CP) and gross energy (GE) content of urea–molasses multi–nutrient blocks (UMMB1 and UMMB2) and their effect on on–farm liveweight gain of different classes of goats.

	DM (%)	CP (%)	GE (MJ/kg)	Liveweight gain (g/d)				
				Adult male*	Adult female*	Young male†	Young female†	Kids^
UMMB1	85.8	22.7	17.1	45.2 ^a	51.9 ^a	54.0 ^a	50.2	64.3
UMMB2	86.7	25.7	18.7	42.1 ^a	54.8 ^a	64.3 ^a	65.5	72.5
Control	–	–	–	5.57 ^b	5.35 ^b	22.0 ^b	30.0	40.2

* over 2 years; † over 6 months and under 2 years; ^ unsexed: aged under 6 months; ^{a,b} Values with different superscripts within the same column differ significantly ($P<0.05$); UMMB1 was imported from Java; UMMB2 was made locally in Timor from urea, rice bran, sugar palm, and dried fish