

EFFECT OF MOLASSES AND NITROGEN SUPPLEMENTS ON THE LIVELWEIGHT PERFORMANCE OF WEANER HEIFERS GRAZING TROPICAL PASTURES

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Beef cattle weaners grazing native pastures in the semi-arid tropics of north Queensland suffer marked liveweight losses during the dry season (Winks and Laing 1972). This results in low survival rates or, with heifers, the onset of puberty may be considerably delayed. In recent years widespread use has been made of molasses based supplements, fortified with various nitrogen sources, to arrest this weight decline during the dry season. The efficacy of these supplements is unknown.

In this study 70 Brahman crossbred weaner heifers six to nine months of age and of initial liveweight ($\pm$ SD) 136.4 ± 1.80 kg were randomly allocated to five native pasture paddocks at a common stocking rate of 2.3 ha/beast. Supplements given and mean daily intakes during the dry season between July 23, 1982 and January 17, 1983 were (i) nil (C), (ii) 814 g molasses + 32 g urea (MU) and (iii) 955 g molasses + 195 g meat meal + 27 g urea (MPU). There were two replications of C and MU and one of MPU. Supplements were provided in open troughs and fed twice weekly until November 16, 1982 at which time rapid and irregular intake of the MPU supplement necessitated a change to daily feeding on that treatment. Liveweight changes during the feeding period were significantly different between treatments ($P < 0.01$) (Table 1).

Table 1 The effect of dry season molasses supplements on the liveweight change and final live weight of weaner heifers (179 days)

	Treatment			SD
	C	MU	MPU	
Liveweight change (g/day)	-87 ^a	+37 ^b	+155 ^c	33.9
Final live weight (kg)	121.6 ^a	142.4 ^b	164.6 ^c	6.63

Means within rows with different superscripts differ significantly ($P < 0.01$).

The feeding of molasses and urea alone changed a liveweight loss to liveweight maintenance, while the additional provision of meat meal stimulated a substantial liveweight gain. The additional response to the meat meal could have resulted from an augmented supply of rumen degradable nitrogen or alternatively due to the availability of amino acids from undegraded dietary protein at the small intestine. Unfortunately no measure of the rumen degradability of the protein meal was available. However, Lindsay et al. (1982), working with pregnant cows given native pasture hay in pens, also recorded an additional liveweight and intake response when a protein mix which was protected from rumen degradation was added to the urea supplemented hay.

This experiment has demonstrated that different production goals are attainable by modifying the composition of the fortified molasses supplement. The relatively low cost of this energy supplement, coupled with its demonstrated versatility, make it a highly practical supplement for commercial use.

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