

SUPPLEMENTATION OF NATIVE PASTURE HAY WITH COTTONSEED MEAL,
METHIONINE, AND AVOPARCIN

B. GULBRANSEN* and N.F. STANDFAST*

Protein is the major nutrient deficiency of spear grass pastures in the dry season, and microbial protein, which is deficient in methionine (Storm and Orskov 1984), is the main source of amino acids for absorption in the small intestine of grazing cattle. Avoparcin (Avotan-Cyanamid Aust.) increases the nett absorption of amino acids (McGregor 1983), so may enhance the effects of supplements such as cottonseed meal (CSM) and Alimet (Monsanto Aust. Ltd), a liquid form of methionine which may resist break-down in the rumen.

Brahman crossbred steers (mean LW 175 kg), in pens in groups of ten, were fed native pasture hay ad lib. for 83 days, with the supplements shown in Table 1. The hay comprised mature spear grass (*Heteropogon contortus*) and forest blue grass (*Bothriochloa bladhii*), with 4.2% crude protein. CSM and avoparcin were fed daily, with the avoparcin applied in aqueous solution. Methionine was mixed with the drinking water. Average daily gains in live weight (ADG) were compared by analysis of variance using the initial fasted live weight as a co-variate.

Table 1. Intakes of native pasture hay and average daily gains in live weight by steers supplemented with cottonseed meal, methionine, and avoparcin

Supplement	Hay intake (kg/d)	ADG (kg/d)
1. Nil	3.1	-0.07 ^a
2. 0.5 kg/d CSM	4.0	0.19 ^{bx}
3. 0.5 kg/d CSM + 200 mg/d avo.	4.1	0.34 ^{bdy}
4. 27 g/d meth.	N.A*	N.A.
5. 0.5 kg/d CSM + 27 g/d meth.	3.7	0.17 ^{bc}
6. 0.5 kg/d CSM + 200 mg/d avo. + 27 g/d meth.	3.5	0.28 ^b
S.E. mean		0.044

Different superscripts show significant differences: a,b,c,d = $P < 0.01$; x,y = $P < 0.05$

*N.A. = treatment terminated due to deteriorating animal condition.

The supplement of 0.5 kg/d CSM increased hay intakes by about one third and ADG by 0.26 kg ($P < 0.01$), giving 1 kg of extra LW gain per 2 kg CSM fed. On the other hand, the addition of methionine (Alimet) to the drinking water depressed intakes of water (12.3 vs 8.7 L/d) and of hay (4.1 vs 3.6 kg/d), and reduced ADG slightly. The use of avoparcin with CSM increased ADG by a further 0.15 kg for steers without methionine ($P < 0.05$), and by 0.11 kg for steers with methionine.

The unpalatability of Alimet makes it unsuitable for addition to drinking water, and its value for roughage-fed cattle is not clear from this work. However, CSM and avoparcin both gave responses which are of practical importance.

McGREGOR, R.C. (1983). In "Recent Advances in Animal Nutrition", p. 163, editor W. Haresign. (Butterworths).

STORM, E. and ORSKOV, E.R. (1984). *Br. J. Nutr.* 52 : 613.