

INTAKE BY SHEEP OF SUGARCANE BAGASSE SUPPLEMENTED WITH DIFFERENT AMOUNTS OF COTTONSEED MEAL

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Utilisation of sugarcane bagasse as a ruminant feed is constrained by the low intake associated with its low crude protein (CP) and high neutral detergent fibre (NDF) contents. Feed intake could be improved by supplementing with protein meals. Previous studies (Suhubdy *et al.* 1996) indicated that cottonseed meal (CSM) was more effective than soybean and fish meals in enhancing intake of bagasse by sheep. The present experiment evaluated the effect of feeding different amounts of CSM on *ad libitum* intake of alkali-treated bagasse (FibremaxTM, Fibretech Development Ltd., Qld) by sheep.

Fifteen Merino wethers, 18 to 20 months old and 30 to 35 kg liveweight (LW), were used according to a completely randomised block design. Three sheep were allocated to each of five groups on the basis of their initial LW and penned individually in animal house. Each sheep was offered *ad libitum* alkali-treated bagasse (20 g CP, 860 g NDF/kg DM) and one of five fixed amounts (0, 80, 160, 240 and 320 g/head/day) of CSM. The bagasse and CSM were offered in two equal meals at 0800 and 1600 hours. Drinking water and a mineral block were available at all times. The response of sheep to CSM supplementation was monitored by measuring daily dry matter intake (DMI) of bagasse and average daily liveweight gain (ADG) of sheep over a period of 35 days after 14 days of adaptation period. Data obtained were analysed by using the General Linear Model procedure of SAS (1990).

Table 1. Mean intakes of bagasse (g DM/day) and average daily liveweight gains (ADG, g) of wethers fed different amounts of CSM (g)

	Treatments					l.s.d (P<0.05)
	CSM-0	CSM-80	CSM-160	CSM-240	CSM-320	
DMI	511	672	1059	1073	1115	258
ADG	-178	-147	13	124	73	88

The results demonstrate that although supplementation of CSM at 80 g/head/day increased DMI of bagasse by 32% it did not sustain sheep liveweight (Table 1). A significant (P<0.05) increase in DMI was achieved when the level of CSM was increased to 160 g/head/day. Above this level, there were no further increases of DMI but a significant improvement in weight gain giving optimal ADG at 240 g/head/day.

Optimum rumen fermentation requires a sufficient supply of rumen degradable protein and energy (Leibholz and Kellaway 1984). The lack of a significant increase in DMI when CSM was fed below 160 g/head/day may be related to insufficient supply of rumen degradable protein from protein in CSM (Sambrook and Rowe 1982). There was a significant (P<0.05) increase in ADG although almost no change in DMI when CSM was increased from 160 to 240 g/head/day. CSM did enhance utilisation of bagasse by sheep, and it appeared that 240 g CSM/head/day was the best in increasing DMI of bagasse and ADG.

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