

INTAKE BY SHEEP OF SUGARCANE BAGASSE SUPPLEMENTED WITH COTTONSEED MEAL AND SUCROSE OR A PROTECTED FAT

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Previous studies (Suhubdy *et al.* 1996) have found that feeding cottonseed meal (CSM) to sheep was effective in improving the intake of sugarcane bagasse. Supplementation of diets containing urea with molasses as an energy source can also improve the utilisation of roughages by ruminants (Leibholz and Kellaway 1984). The present experiment evaluated the efficacy of feeding mixtures of CSM plus either sucrose or a protected fat (EnermaxTM, Chevis Morat Pty. Ltd. Toowong, Qld.) on *ad libitum* intake of alkali-treated bagasse (FibremaxTM, Fibretech Development Ltd., Qld) by sheep.

Twelve Merino wethers, 20 to 23 months old age and 30 to 35 kg liveweight (LW), were used according to a completely randomised block design. Four sheep were allocated to each of three groups on the basis of their initial LW and penned individually in an animal house. Each sheep was offered *ad libitum* alkali-treated bagasse. Each sheep in each group was offered daily 200 g CSM alone (CSM), or with 70 g sucrose (CSM+sucrose) or 30g EnermaxTM (CSM+EnermaxTM) as a protected fat. The supplements were offered in equal amounts at 0800 and 1600 hours. Drinking water and a mineral block were available at all the times. The sheep performance was monitored by measuring daily dry matter intake (DMI) of alkali-treated bagasse and average daily gain (ADG) of sheep over a period of 35 days after 14 days of adaptation period. Data were statistically analysed by using the General Linear Model procedures (SAS 1990).

Table 1. Mean intakes of bagasse (g DM/day) and average daily liveweight gains (ADG, g) of wethers fed supplements of cottonseed meal (CSM, 200 g/day) alone or with sucrose (70 g/day) or protected fat (30 g/day)

	Treatments			l.s.d. (P<0.05)
	CSM	CSM+sucrose	CSM+ Enermax TM	
DMI	734	634	423	121
ADG	55	68	-1	43

Addition of sucrose to CSM showed a nonsignificant decrease in DMI of bagasse but a slight increase in the ADG. There was a significant (P<0.05) depression in DMI and ADG when EnermaxTM was added to CSM.

The lower DMI of sheep in the CSM+sucrose group was consistent with Faichney's (1965) report that sucrose tended to decrease roughage intake. Dietary fat has an inhibitory effect on fibre digestion in the rumen (Palmquist 1995). The poor response by sheep in the presence of EnermaxTM may be because the fat in EnermaxTM was not fully protected from degradation in the rumen. It is concluded that mixtures of CSM with sucrose or EnermaxTM were not better than CSM alone in improving intake of sugarcane bagasse by sheep.

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