

WHOLE COTTONSEED AS A SUPPLEMENT FOR BEEF CATTLE FED LOW QUALITY NATIVE PASTURE

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Whole cottonseed has been widely studied as a component of rations for dairy cows (Bernard and Amos 1985). It has been used as an alternative supplement to cottonseed meal for beef cattle grazing low quality native pastures in northern Australia. However, only limited information is available on the effect of whole cottonseed on liveweight gain or on diet digestibility in this environment. The present study compared cottonseed meal and whole cottonseed as supplements for beef cattle offered low quality diets.

The digestibility data were obtained from four *Bos indicus* crossbred steers (200 kg liveweight) in a cross-over design with two treatments and two periods. The growth study used 16 *Bos indicus* crossbred steers (145 kg liveweight) which were fed for 79 days in four pens, each of four animals. The two supplements were: 1kg/d whole cottonseed and 0.5 kg/d cottonseed meal. The animals in the growth study which were fed cottonseed meal also received 65 g/d urea. A basal diet of low quality native pasture hay (0.4% N) was fed ad libitum.

The digestibility and liveweight gain results are presented in Table 1.

Table 1. Dry matter digestibility, feed intake and liveweight gain.

	Supplement		SEM
	Cottonseed meal	Whole cottonseed	
Digestibility study			
Dry matter intake (kg/d)			
Roughage	3.09	3.30	0.22
Total	3.54a*	4.30b	0.26
Dry matter digestibility (%)	43.4	43.1	0.31
Growth study#			
Dry matter intake (kg/d)			
Roughage	2.14a	1.73b	0.09
Total	2.61	2.65	0.09
Liveweight gain (kg/d)	0.09	0.01	0.03

* Means with dissimilar postscripts are statistically significant ($P < 0.05$).

65 g/d urea fed to animals given cottonseed meal only.

The apparent digestibility of dry matter and liveweight gain were similar for both diets (Table 1). However, total dry matter intake was significantly higher ($P < 0.05$) when whole cottonseed was fed and compared with cottonseed meal alone. In contrast, when urea was added to cottonseed meal total dry matter intake was significantly higher ($P < 0.05$) when compared with whole cottonseed in the growth study. This difference is likely to be due to the stimulating effect of urea on roughage intake. Thus when fed at moderate levels whole cottonseed and urea plus cottonseed meal produced comparable liveweight gains with no effect on dry matter digestibility.

BERNARD, J.K. and AMOS, H.E. (1985). *J. Dairy Sci.* 68:3255.