

PROTECTED PROTEINS AS SUPPLEMENTS FOR BULLS FED TROPICAL FORAGE DIETS

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Under the extensive conditions encountered in the dry tropics of Australia mating in the beef herd usually commences immediately after the onset of the wet season. Bulls are often mated only four to six weeks after suffering a period of liveweight loss. This experiment looked at the liveweight change and reproductive responses when bulls were subject to two different planes of nutrition.

Native pasture hay (predominantly *Heteropogon contortus*) containing 0.4% N was chaffed and fed *ad libitum* to 12 Brahman crossbred bulls 3½ years old. The bulls were fed in pens for 60 days and six were fed a supplement of 1 kg protected protein (80% formaldehyde cottonseed meal; 10% meat and bone meal; 10% fish meal). Table 1 gives the results for liveweight change, feed intake and scrotal circumference measurements.

TABLE 1 The effects of supplementation with protected protein on the liveweight change, feed intake and scrotal circumference of bulls fed native pasture hay

	Control	Protected protein	SE of mean
Initial full live weight (kg)	432.8	433.3	10.3
Full liveweight change (kg)	-40.1 ^{a†}	+13.9 ^b	7.8
Roughage dry matter intake (kg/d)	5.55	7.74	0.8
Total dry matter intake (kg/d)	5.55	8.65	0.8
Change in scrotal circumference (mm)	-20.0 ^a	0.7 ^b	7.4

† Means with dissimilar superscripts are significantly different (P < 0.05)

Much of the response in liveweight change appeared to be due to a stimulus in feed intake with supplementation. The animals were slaughtered and there was a significant increase (P < 0.05) in carcass weight of 28.4 kg in the supplemented group.

This study has demonstrated that manipulation of the plane of nutrition with protected proteins will not only influence liveweight change and carcass gain but also affect scrotal circumference. The potential significance of the alteration in scrotal circumference in terms of sperm production rate and bull fertility has yet to be established. However, there are indications from work with *Bos taurus* animals that animals with a lower scrotal circumference will be less fertile (Blockey 1980).

BLOCKEY, M.A. de B. (1980). *Proc. Aust. Soc. Anim. Prod.* 13: 52.

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