

## SUPPLEMENTATION OF CITRUS PELLETS WITH UREA

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Citrus pulp pellets have been fed to sheep and cattle during droughts in Victoria. McKenzie (personal communication) was unable to maintain the liveweight (21 kg) of young sheep offered 3.2 kg of citrus pellets and 0.9 kg of hay/week. The low nitrogen and high digestible energy content of citrus pulp suggests that supplementing it with non-protein nitrogen may improve the performance of young sheep fed solely on citrus pellets during periods of drought.

Two experiments were carried out. In Experiment I twelve second cross female lambs were allotted on the basis of liveweight to two groups and fed outside in a feedlot. The lambs were offered ad libitum citrus pellets (6.0% crude protein) OR citrus pellets sprayed with 2% urea (Orskov *et al.*, 1974) to raise the crude protein content to approximately 12%. Both diets were supplemented with 0.7%  $K_2SO_4$  and 0.6%  $NaH_2PO_4$ . Group intakes and individual liveweight gains were recorded for 6 weeks. One animal in the group supplemented with urea died of unknown causes in the 5th week. At the end of Experiment I one animal was selected at random from those fed citrus pellets alone and discarded. The remaining 10 animals were re-randomized on the basis of liveweight to two groups and transferred indoors to individual pens. The two groups were again offered citrus pellets or citrus pellets supplemented with urea. Individual intakes and liveweight gain were recorded for 4 weeks. The results of both experiments are set out in Table 1.

TABLE 1: Voluntary food intake and liveweight gain of the lambs

Experiment	Ration	Food Intake (g/d)	Liveweight gain (g/d)
1	Citrus Pellets	419	12 a <sup>†</sup>
	Citrus Pellets + Urea	619	86 b
2	Citrus Pellets	282 a	-159 a
	Citrus Pellets + Urea	668 b	44 b

<sup>†</sup> Means within an experiment without a common superscript differ significantly (P < 0.01)

The results indicate that supplementation of citrus pellets with 2% urea significantly increased the liveweight gain of the feedlot lambs and prevented a loss in liveweight of those lambs fed indoors. These responses were associated with an increase in intake of citrus pellets by the lambs.

Although roughage was not provided in this study small amounts would almost certainly be required to prevent parakeratosis and to possibly increase the intake of citrus pellets still further. This aspect is being investigated.

ORSKOV, E.R., SMART, R. and MEHREZ, A.Z. (1974) J. agric. Sci., Camb. 83: 299

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