

COMMERCIAL USE OF GRAIN SUPPLEMENTS CONTAINING NITROGEN FERTILISERS TO LIMIT INTAKE

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The practice of using grain as a supplement for grazing cattle may be restricted because of the need to feed animals daily. Barker *et al.* (1988) developed a system for limiting the intake of grain supplements through the addition of urea and super-phosphate to the grain. This system has been further modified using a combination of urea and ammonium sulphate and enables supplements to be provided *ad libitum* while restricting the intake of animals to the required level (Barker and May 1990).

This system was evaluated under commercial conditions at Young River Station, Esperance Western Australia during summer/autumn with 3 different classes of stock. The supplement contained 94.5% crushed oats, 3% urea, 0.5% ammonium sulfate, 1.5% limestone and 0.5% salt and was available *ad libitum* from self feeders placed in paddocks where the animals had access to dry standing feed. It was introduced over 13 days by varying the content of urea and ammonium sulfate as outlined in Table 1.

Table 1. Introduction procedure for supplement

Day:	1 – 4	5 – 8	9 – 12	13+
Grain (%)	90	92	93.5	94.5
Urea (%)	4	4	4	3
Ammonium sulfate (%)	4	2	0.5	0.5

The 3 classes of livestock were; replacement Hereford heifers needing to reach target mating weight, Hereford weaner steers that were to be sold as stores and larger Brahman cross steers to be sold for slaughter. Details of the animals and their performance are shown in Table 2.

Table 2. Details of animal groups and their performance on grain supplements

	Replacement heifers	Weaner steers	Slaughter steers
No. of animals	202	164	39
Starting liveweight (kg)	229	180	324
Final liveweight (kg)	261	220	423
Days	77	59	148
Average daily gain (kg/day)	0.42	0.68	0.67
Intake of grain (kg/day)	1.97	3.32	5.8

The animals adapted well to the supplement and there were no losses or health problems. There was some variation in intake between the groups. Previous experience (Barker and May 1990) indicated that the intake of this supplement mix should be about 2% of liveweight. The intake of both steer groups was similar and approached 2% of their liveweight. The lower intake of the heifers is difficult to explain. All groups had access to dry pasture residues. When these were exhausted the animals were offered *oaten* hay. The quality of the pastures residues was not measured, however there were no obvious differences between the paddocks and the quality would have been expected to be similar. All the hay came from the same source and the animals were given access to it at a similar time.

These results show that limiting supplement intake with urea and ammonium sulphate is a practical system for supplementing different classes of livestock.

BARKER, D. J., MAY, P. J. and JONES, W. M. (1988). *Proc. Aust. Soc. Anim. Prod.* **17**: 146-9.

BARKER, D. J. and MAY, P. J. (1990). Final Report, Project N° 43, Cattle Industry Research Trust Fund. Department of Agriculture, Western Australia.