

## EFFECTS OF PROVIDING PRIOR EXPERIENCE OF A FEEDLOT ENVIRONMENT ON THE PERFORMANCE OF FEEDLOT CATTLE

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Cattle sourced for feedlots from extensive properties will generally have little experience of conditions to which they will be exposed in feedlots, eg close contact with humans, confinement, crowding and feed in troughs. Such conditions can result in stress (Fell 1994) which can have adverse effects on health and performance (Moberg 1985). This experiment determined the effect of prior exposure to aspects of a feedlot environment on the feedlot performance of *Bos indicus* steers.

One hundred 2 to 3 year old Brahman steers, with little experience of humans and confinement, were sourced from an extensive property north-west of Charters Towers. The steers were allocated to 2 treatments; feedlot naive (N) and feedlot pre-exposed (E), and future feedlot groups on the basis of liveweight (469.3 kg). The N group was returned to a paddock, whilst the E steers were retained in a yard (1100 m<sup>2</sup>) for 9 days. The steers were given lucerne hay in racks (about 5 kg/head.day) and a feedlot starter-ration from troughs (about 0.75 kg/head.day). Twice daily a vehicle was driven into the yard, and morning and afternoon, 1 or 2 people walked amongst the cattle for about an hour.

After 9 days, the paddock cattle were mustered and held in yards overnight. Treatment groups were divided into 4 and trucked 15 hours (950 km) to Brigalow Research Station in central Queensland. Here each feedlot group was randomly allocated to 10 pens (5m x 30m), each of 10 animals. Cattle were weighed on days 1 (feedlot entry), 5, 9, 16, 27, 41, 55, 69, 76, 83, 90, 97 and 101.

**Table 1** Average daily gains (kg/day) calculated from feedlot entry liveweight<sup>A</sup> and successive weighings<sup>B</sup> for naive (N) and feedlot pre-exposed (E) cattle

		Day number in feedlot											
		5	9	16	27	41	55	69	76	83	90	97	101
ADG <sup>A</sup> (kg)	N	2.2	1.4	1.1	0.7	1.1	1.1	1.2	1.0	1.1	1.0	1.1	1.0
	E	3.4	2.7	2.0	1.4	1.4	1.4	1.3	1.2	1.2	1.2	1.2	1.0
		*	**	**	**	*	*	NS	*	NS	NS	NS	NS
ADG <sup>B</sup> (kg)	N	2.2	0.3	0.7	0.2	1.7	1.0	1.4	-0.8	2.4	0.5	1.3	-1.4
	E	3.4	1.7	1.1	0.4	1.5	1.1	1.2	-0.1	1.8	0.9	1.5	-1.4
		*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

NS non significant, \*P<0.05, \*\*P<0.01.

In the 9 days between mustering and trucking, the N and E groups lost 24.5 and 33.6 kg respectively with liveweights pre-trucking being 445.5 and 434.9 kg (P < 0.01) respectively. During trucking the N and E groups lost a further 19.1 and 23.7 kg respectively. However these differences had disappeared by day 9 in the feedlot. Average daily gains (ADGs) based on feedlot entry liveweight were superior (P < 0.05) for the E steers to day 55 (Table 1). ADGs based on successive weighings were better (although not statistically different) for the E cattle to day 27 (Table 1). Final liveweights pre-slaughter were 524.6 and 525.2 kg and the ADGs for the complete period from allocation to pre-slaughter were 0.48 and 0.50 kg/day for N and E respectively.

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FELL, L.R. (1994). *Proc. Aust. Soc. Anim. Prod.* **20**: 66-7.

MOBERG, G.P. (1985). "Animal Stress" (Am. Physiol. Soc.: Bethesda)