BACKGROUND TREATMENT AFFECTS CARCASS COMPOSITION OF LOT FED STEERS

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Potential growth and ultimate body composition of cattle are influenced by the type and amount of the ration fed during the background period before cattle enter the feedlot (Oddy 1997). It has also been demonstrated that comparatively low background growth rates are associated with high feedlot or pasture finishing growth rates (Oddy 1997). The present study investigated the effects of three growth rates (Low, Medium and High) in a 183 day background period on the performance of ninety Hereford steers in a short feedlot phase.

Steers in the Low group were managed on pasture with supplements to achieve an average daily gain (ADG) of 0.35 kg. Steers in the Medium group averaged 0.64 kg/day after they lost an average of 45 kg in the first 84 days of backgrounding and then grew at 1.57 kg/day for the remaining period. Steers in the High group were grown at 0.83 kg/day. After backgrounding the steers were transferred to the feedlot and fed a balanced feedlot ration (11.7 MJ ME/kg DM; 12.7% CP) across the three treatment groups for 89 days until slaughter. Liveweight was recorded prior to slaughter and carcasses were weighed and assessed for fat depth at P8 site, eye muscle area and marble score using the AUS-MEAT chiller assessment system. Data were analysed using the general linear model procedure of SAS (1988) and results are presented in Table 1.

Table 1. Mean for liveweight (LW, kg) at both start and end of backgrounding and feedlot periods, ADG (kg/day), carcass weight (kg), eye muscle area (cm^2) and fat depth (mm) for steers backgrounded at three different growth rates. The standard error of the mean is presented for each measurement

Measurement	Low	Medium	High	s.e.m.
Backgrounding LW start	292	290	292	4
LW end	356[c]	407[b]	443[a]	6
Feedlot - LW start	351[c]	393[b]	434[a]	6
LW end	508[c]	555[b]	593[a]	7
ADG - background	0.35[c]	0.64[b]	0.83[a]	0.02
ADG – feedlot	1.8	1.9	1.9	0.05
Carcass weight	262[c]	288[b]	312[a]	4
Eye muscle area	65.7[b]	71.7[a]	75.0[a]	1.2
Fat depth - P8	12.7[b]	16.7[a]	16.8[a]	0.8
Marble score	0.03[ab]	0.00[b]	0.13[a]	0.04

[a] Different superscripts within rows indicate significant differences ($P < 0.05$).

The results show that liveweight differences established during the backgrounding period were maintained in the feedlot period. The growth rates in the feedlot were not affected by background ADG, which differs from Oddy (1997). An explanation for this is that the animals were able to express compensatory gain in the long backgrounding period. The eye muscle area and fat depth of steers in the Low group were significantly less than those in both the Medium and High groups. This may be due to differences in carcase weight. There was a significant difference in marble score which supports the hypothesis that backgrounding has a significant effect on carcass composition.

ODDY, H. (1997). *In* 'The 5th National Beef Improvement Association Conference', Armidale pp.41-46.
SAS INSTITUTE INC. (1988). SAS/STAT User's guide. Release 6.03 Ed. (SAS Inst. Inc.:Cary).