Effects of grain processing on the performance of mixed-sex, crossbred weaner lambs in a feedlot.

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Grain processing has been shown to improve cattle performance, but inconsistent effects have been reported for sheep (Horadagoda *et al*. 2008; Sormunen-Cristian 2013). The aim was to investigate the effects of grain processing on the liveweight (LW), body condition score (BCS) and feed conversion ratio (FCR) of mixed-sex, crossbred weaner lambs in a feedlot.

Seventy-two mixed-sex, Merino x Dorset weaner lambs were selected on the basis of LW (35.8 ± 1.7 kg) and BCS (3.8 ± 0.4). A complete random block design consisting of three dietary treatments (whole, rolled and steam-flaked barley) and four replicates (pens) per treatment, with six lambs per replicate (pen) was used. Diets were approximately isoenergetic and isonitrogenous, and formulated to meet the nutritional requirements of growing lambs (14% CP, 12 MJ ME/kg DM). Lambs were adapted to the diet over a minimum period of 2 weeks. Comparisons between groups were analysed with ANOVA. As shown in Table 1 grain processing only had a significant effect ($P < 0.05$) on FCR, being significantly lower for lambs fed steam-flaked barley compared with whole barley. This is in contrast to Morgan *et al.* (1991) who found no difference when feeding either stream-rolled or whole barley to sheep. Thus steam-flaking of barley is beneficial for improving the FCR of lambs under feedlot conditions.

Parameter	Whole barley	Rolled barley	Steam-flaked barley	P-value
Daily feed intake (kg/d)	1.30 ± 0.132	1.31 ± 0.126	1.33 ± 0.130	0.6869
Final LW (kg)	48.4 ± 4.11	48.7 ± 3.57	50.5 ± 4.60	0.1526
Daily LW gain (g/d)	224 ± 68.2	231 ± 53.3	263 ± 64.0	0.0843
Final BCS	4.0 ± 0.29	4.1 ± 0.22	4.2 ± 0.24	0.1958
Feed conversion ratio	5.73 ± 0.483[b]	5.48 ± 0.329[ab]	4.96 ± 0.177[a]	0.0357

Values within rows with varying superscripts differ ($P < 0.05$).

Table 1. The effect of processing of barley grain on average (± SD) lamb performance

References

Horadagoda, A, Fulkerson, WJ, Barchia, I, Dobos, RC, Nandra, KS (2008) The effect of grain species, processing and time of feeding on the efficiency of feed utilization and microbial protein synthesis in sheep. *Livestock Science* **114**, 117-126.

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