

**FEEDLOTTING CAST-FOR-AGE MERINO SHEEP TO INCREASE THEIR VALUE**

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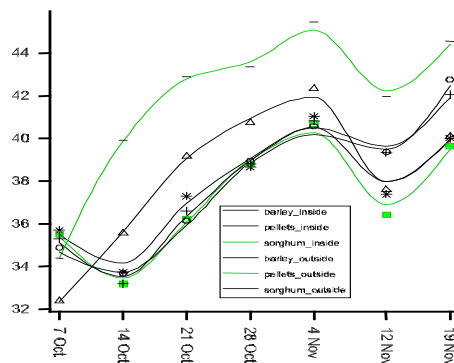
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Intensive grain feeding of older sheep prior to sale could be used to improve their weight, condition and sale value, however, the performance from different grain types remains to be determined. This study examined the effect of different grain types fed to cast-for-age Merino sheep in a covered shed or in open air pens in terms of growth rate and feed conversion ratio.

Six hundred cast -for-age Merino wethers, 7 years of age and weighing 34 kg liveweight ( $\pm$  s.d. 4.1), were randomly allocated to 1 of 12 groups. A randomly drafted group sent to slaughter at the same time dressed at 43.6% (s.d  $\pm$  0.06). Each of the 12 groups was allocated to 1 of 6 treatments. Three dietary treatments were fed either under cover or in open pens. The diets were: 1) commercial lamb feedlot pellets based on sorghum grain; 2) whole sorghum; and 3) whole barley. The 2 whole grain diets contained a mixture of urea (0.9%), ammonium sulphate (0.3%) and limestone (1%). All sheep had free access to sorghum hay. The sheep were shorn and gradually introduced to whole sorghum grain in the paddock from 22 August, 2003. They were drafted into their treatment groups and penned and introduced to their diets on 7 October 2003. Grain-based components of the diets and the hay were fed separately in each pen. Water was freely available through drinking nipples. The grain based diets were weighed into self-feeders daily and residues were measured weekly. Animals were weighed each week prior to feeding over a 6-week period until 19 November.



**Figure 1. Weight change patterns for sheep on pellets, barley and sorghum diets in covered and open-air pens. (Pellet inside  $\Delta$  outside -; Barley inside \*;outside +; Sorghum inside  $\square$  outside o).**

**Table 1. The effect of different grains and covered and open-air pens on sheep performance.**

	Barley	Pellets	Sorghum	s.e.d	Inside	Outside	s.e.d
Linear growth rate (kg/day)	0.15	0.17	0.15	0.029	0.13 <sup>a</sup>	0.19 <sup>b</sup>	0.023
Efficiency (kg DM/kg gain)	16.5	11.4	13.1	4.39	16.7	10.7	3.59
Mean logit (probability in brackets) of sheep remaining in treatment groups	0.030 <sup>a</sup> (0.51)	2.089 <sup>c</sup> (0.89)	0.525 <sup>b</sup> (0.63)	0.247	0.838 (0.70)	0.913 (0.71)	0.203

Means in rows with the different superscripts differ significantly (P<0.05)

The non-linear weight patterns for the diet location groups over time are shown by the fitted splines in Figure 1. The growth rate of inside groups was significantly different to those fed outside, but there was no significant difference in efficiency (Table 1). Sheep adapted better to the commercial pellets, with better early weight gains compared with the sorghum and barley diets. Given growth performance from day 7 of the latter diets, and the price advantage of these grains, the management of grain introduction to maximise adaptation (especially for sorghum) warrants further investigation as a way to finish cast-for-age wethers. Further analysis could help determine at what stage decisions could be made about retaining sheep in the feedlot.

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