

COMPARISON OF FEEDING SYSTEMS IN A COMMERCIAL LAMB FEEDLOT

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A web Feedlot Calculator was designed to assist producers to determine the profitability of feedlotting lambs, as part of the nutrition program of the Australian Sheep Industry CRC. Separate feeding offers the potential to provide a cheaper ration by removing the need for processing hay into chaff and also reduces capital equipment costs. The calculator has been used to test this assertion and to establish the profitability of 2 feeding systems in a commercial situation:

(a) separate feeding of concentrate and hay (SEP) in 2 feeders after the introduction period.

(b) combined feeding of concentrate and hay (COM) in 1 self feeder for the total period.

Weaned 2nd cross lambs (n=250), average liveweight (LWT) 36.5 kg, were tagged (e-tag) and drafted alternatively into 2 pens and fed *ad libitum* on ration COM for 18 days using 2 self feeders per pen (each 2.4 m long, 1.63 m³ capacity). Lambs to be allocated to the SEP ration also had access to baled lucerne hay in a covered hay self feeder during the introduction phase. All rations were fed *ad libitum*. Lambs were weighed at the commencement of the introduction period, at the start of feeding treatment and prior to removal for slaughter. The lambs were removed for slaughter on 3 occasions (16 January 2006; and 30 January 2006) for lambs above 48 kg LWT, then the remainder (14 February 2006). Costs and sales data were provided by the producer. LWT changes, feed intake, ration details and a calculated potential profit summary are shown in Table 1.

Table 1. Average production inputs (from entry until slaughter), ration compositions (% as fed) and estimated profit summary for lambs in SEP and COM systems

Production Inputs	SEP	COM	Profit Summary	SEP	COM
Starting LWT(kg)	37.5	35.5	Ration Cost (\$ tonne/DM) ²	236.00	309.00
Slaughter LWT (kg)	52.0	52.0	Income/lamb (\$)	106.36	106.36
DM/d (% LWT) ⁴	3.0	2.8	Costs/lamb (\$) ³	98.24	100.71
Growth Rate (g/d)	210	235	Profit/lamb(\$)	8.12	5.65
Concentrates (%)	71	54			
Lucerne hay (%)	21	36			
Additives ¹ (%)	8	10			

¹Additives as % fed, Cottonseed meal (4.0), Premix (2.0), Urea (1.0), Bentonite (2.0), Canola Oil (0.8) per tonne of COM or SEP (concentrate). ²Overall cost which includes introduction period of 18 days. ³Costs include animal variable and fixed costs, feed out costs including labour. ⁴DM= Dry Matter

Lambs in system SEP selected 22% (as fed) of the ration as baled lucerne hay. The growth rates are in agreement with the results of Bowen *et al.* (2006) who found that there is little difference between pellets, a mixed concentrate or separate feeding systems. The SEP lambs required 6.4 kg DM (COM lambs = 5.2 kg DM) to produce each kg of LWT. This may be a reflection of the feeding method, but the comparison is confounded as the overall rations are different for energy, crude protein and the proportion of concentrate consumed.

The Feedlot Calculator can be used as a tool to establish profit from a production data set as summarised in Table 1 or used to predict profit for a production scenario with a number of "what if" options prior to making a commitment to enter a potentially unprofitable lamb feedlotting enterprise. For example, if we model these 2 feeding options using the feed conversions in Table 1, apply a shorter introduction period of 7 days where all lambs are fed the COM ration after which concentrates and hay combinations are adjusted so the rations are similar for energy and crude protein, the SEP option still produces an extra profit of \$2.70 per lamb.

The Feedlot Calculator is freely available on the Australian Sheep Industry CRC and NSW DPI web sites. We wish to thank Tony Grant and Sarah Cartwright "Riverside" Canowindra for providing access to their feedlot.

BOWEN, M.K., RYAN, M.P., JORDAN, D.J., BERETTA, R.M., KIRBY, R.M., STOCKMAN, C., McINTYRE, B.L. and ROWE, J.B. (2006). Proc. Aust. Sheep Indust. CRC, Orange, Australia 134-41.

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