

Prime lamb production from adjacent monocultures of grass and clover

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Sheep prefer a mixed diet of about 70% clover and 30% grass, and clover promotes higher intakes and levels of animal performance (Cosgrove *et al.*, 1999). However, clover often comprises less than 20% of total pasture yield in mixed pastures in southwest Victoria (Quigley *et al.*, 1992). Offering adjacent monocultures of grass and clover for grazing animals may be a simple and practical means for sustaining desirable components in the diet and thereby increasing animal performance.

The 'Morelamb Quality Pastures' project has established a research site on a commercial property near Hamilton in southwest Victoria. Three replicates of the following four treatments were sown in June 2002; (i) perennial ryegrass monoculture, (ii) subterranean clover monoculture, (iii) perennial ryegrass and subterranean clover sown in a

conventional mix, and (iv) treatments (i) and (ii) sown side-by-side (choice). These plots were stocked with eight crossbred ewes (62.3 ± 0.69 kg) and their twin lambs (18.0 ± 0.23 kg; 2 months of age) for 7 weeks (24 October to 9 December 2002), with pastures fed *ad libitum*.

Lambs grazing mixed grass/clover pastures (16% clover) grew at 285 g/head/day (Figure 1) during the 7-week period. Lambs offered the choice or clover pastures grew faster than this at about 370 g/head/day, while those on ryegrass were slower at about 255 g/head/day ($p < 0.001$). Ewes offered the choice and clover treatments gained weight significantly faster than on the mixture and ryegrass treatments ($p < 0.001$).

The variation in lamb performance is likely to reflect differences in the proportion of clover in the diet

(Poppi and McLennan, 1995). There were no significant differences in ewe or lamb gain between the choice treatment and clover monoculture, but the onset of reproductive development in the pastures may have reduced the sheep preference for ryegrass and resulted in a predominately clover diet.

The results affirm the value of clover as an animal feed. More effective ways of sustainably increasing clover in pastures and animal diets are required to support high lamb growth rates. Further work in this project will investigate the factors controlling diet selection and intake of animals with high nutritional demand when grazing grass and clover.

References

- Cosgrove, G. P., Waghorn, G. C., and Parsons, A. J. 1999. Exploring the nutritional basis of preference and diet selection by sheep. *Proc. New Zealand Grasslands Assoc.* 61:175-180.
- Quigley, P. E., Ward, G. N., and Morgan, T. 1992. Botanical composition of pastures in south-west Victoria. *Proc. 6th Australian Society of Agronomy Conference* 533.
- Poppi, D. P., and McLennan, S. R. 1995. Protein and energy utilization by ruminants at pasture. *Journal of Animal Science* 73:278-290.

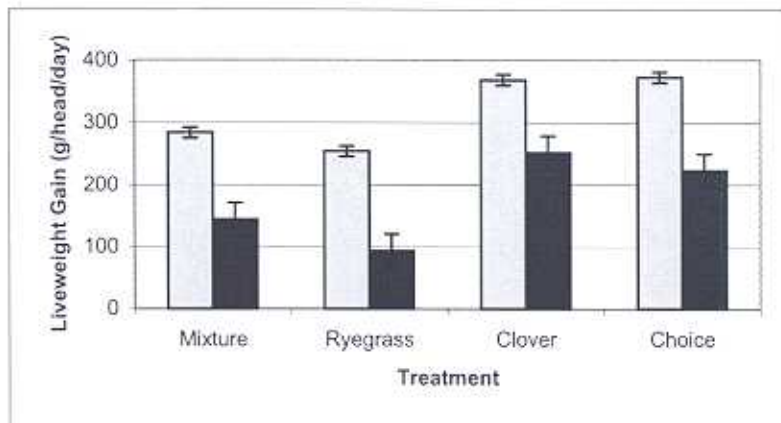


Figure 1. Liveweight gain (g/head/day) of ewes and twin lambs grazing four pasture treatments; (i) perennial ryegrass and subterranean clover mixture; (ii) ryegrass alone; (iii) clover alone; (iv) ryegrass and clover offered side-by-side, over a seven week period.