Long-season annual legumes to increase lamb production

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One of the key challenges in pasture-based animal production systems is matching feed supply to fluctuating animal demands throughout the year. In southern Australia, spring-lambing systems are generally more profitable than autumn-lambing systems, although weaning and pasture 'haying off' sometimes coincide, resulting in poor growth of weaned lambs. In this situation, supplementary feed or fodder crops can be used to achieve target growth rates but are likely to increase the cost of production significantly. Furthermore, ewes also may need to be supplemented over the summer/autumn period to reach target condition for joining.

The 'Morelamb Quality Pastures' project is investigating two alternative legumes that have potential to extend the growing season and reduce the summer-autumn feed deficit. The two species being evaluated are diffusum (*Trifolium diffusum*) and arrowleaf (*T. vesiculosum*). These species are later maturing than currently recommended species, such as sub clover (*T. subterraneum*) and, in small plot trials, have demonstrated the potential to provide quality green feed well into summer.

One-hectare plots of diffusum, arrowleaf (cv. Arrotas), perennial ryegrass (cv. Avalon and Fitzroy), sub clover (cv. Leura), and a sub clover/perennial ryegrass mixture (in four replicates) were sown on a commercial property in southwestern Victoria in autumn 2002. Throughout the growing season, the pastures were grazed to maximise seed yield so as to ensure pasture regeneration in the following seasons. Pasture samples were collected fortnightly from the arrowleaf, diffusum, sub-clover, and perennial-ryegrass plots between October and February. Each sample was analysed by FEEDTEST® for dry matter digestibility and crude protein content.

Dry matter digestibility and crude protein content of all pasture species declined as spring progressed into summer (Figure 1). However, the digestibility of arrowleaf clover was significantly higher than that of diffusum and sub clover from mid-December onwards. Also, all clovers had a higher crude protein content than perennial ryegrass for most of the season. The largest difference in dry matter digestibility was in early January when arrowleaf was approximately 70% digestible, while perennial ryegrass and the other clovers were only 55% to 60% digestible. Such differences are likely to influence lamb growth rates considerably.

The results suggest that arrowleaf particularly offers excellent potential to improve spring lamb production by producing high-quality feed in late spring to mid summer. The suitability and economic viability of the pastures to finish lambs, born in August/September, to 45 kg in January/February will be evaluated in spring/summer 2003 and 2004.

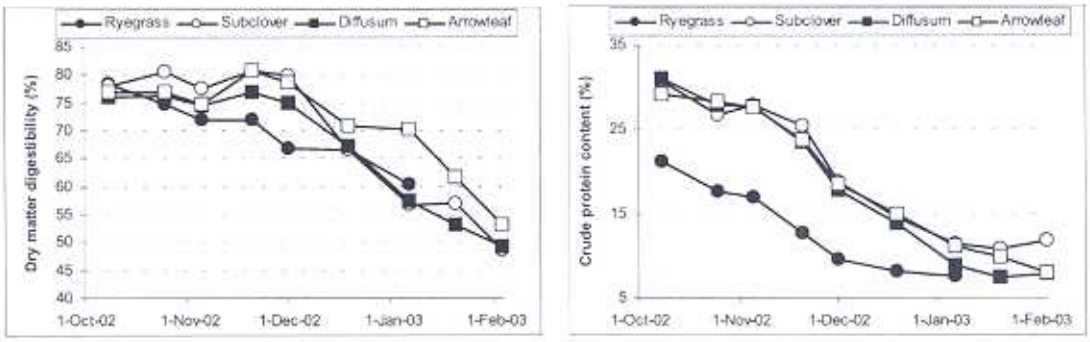

Figure 1. (a) Dry matter digestibility and (b) crude protein content of the four pasture species during late spring/early summer in 2002/03.