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The economic advantage of 1-year-old lambing systems in Merino flocks

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Lambing Merino ewes as 1-year-olds represents an opportunity to improve the profitability of commercial flocks. Early lambing systems can increase the number of females bred per year allowing larger numbers of offspring to be retained as replacements or traded off-farm (Fogarty *et al.* 2007). However, higher levels of nutrition are essential for good reproductive results from ewe lambs and to ensure their productivity is not compromised later in life (Kenyon 2008). We tested the hypothesis that lambing ewes at 1-year-old can be more profitable than conventional 2-year-old lambing systems in commercial self-replacing Merino flocks.

The GrassGro modelling tool was used in this study to estimate the increase in supplementary feeding required to manage ewes under 1-year-old lambing systems compared with 2-year-old lambing systems. Within simulations, young ewe replacements were managed to achieve the live weight profile that was ‘best practice’ for each lambing system. Simulations were run for both annual and lucerne-based pastures at Wedderburn, Victoria between 1st Jan 1971 and 31st December 2010 at stocking rates 2, 4, or 6 ewes/ha. The Marginal Rates of Return (MRR) from adopting 1-year-old lambing systems were calculated by dividing the change in expected ‘net benefits’ by the change in supplementary feeding costs in each simulation year. We assumed supplement feed costs of \$250/t and 0.6 weaned lambs produced annually from 1-year-old ewes valued at \$50/head.

The mean annual MRR from adopting 1-year-old lambing systems was positive for all pasture system by stocking rate combinations and benefit ranged from 12 to 71% (Table 1).

Table 1. Mean marginal rate of return from adopting 1-year-old lambing systems at Wedderburn, Victoria

| Stocking rate (ewes/ha) | Lucerne-based pasture | | | Annual-based pasture | | |
|-------------------------|----------------------------------|------------------------------------|------------------------------------|----------------------------------|------------------------------------|------------------------------------|
| | Mean net benefit (\$/ewe joined) | Mean marginal cost (\$/ewe joined) | Mean MRR 1-year-old lambing system | Mean net benefit (\$/ewe joined) | Mean marginal cost (\$/ewe joined) | Mean MRR 1-year-old lambing system |
| 2 | \$ 10.51 | \$ 19.49 | 71% | \$ 2.72 | \$ 27.28 | 21% |
| 4 | \$ 4.21 | \$ 25.79 | 30% | \$ 2.46 | \$ 27.54 | 23% |
| 6 | \$ 1.27 | \$ 28.73 | 12% | \$ 1.91 | \$ 28.09 | 19% |

The study suggests the extra investment in supplementary feed to manage 1-year-old lambing systems was more than compensated by increases in the value of production generated. Results indicate both pasture type and stock density will affect marginal profits, an important consideration for producers weighing-up the potential benefits according to their current production system. Further modelling is required to assess the comparative profitability of 1-year-old lambing in other environments and the impact that altered production or price scenarios have on enterprise profits.

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