

Project Profile - Dairy

Managing the Economics of Feed Supply on Dairy Farms



The aim is to provide the dairy industry with robust analysis of the cost and risks of making changes to feed supply (home grown and purchased) to increase on-farm profitability.

Driver for the Research

The national dairy industry is worth over \$3 billion at the farm gate, and small changes in productivity at the farm level will have a large impact at the industry level. The supply of feed to convert into milk solids is the major cost in the annual production cycle of a dairy farm business, comprising 85% of variable costs and about 50% of total farm costs. The cost of feed in relation to the price of the milk it produces is the major determinant of profit in dairying. Combining alternative sources of feed for dairy cows in low cost, profitable ways is the major challenge for dairy farmers; a challenge about which they make decisions on a daily basis, in circumstances where much is unknown and where quantity, quality and costs of feed vary markedly through the year.

This project will take the established production economic theory and apply these economic principles about low cost and profit maximising feed supply under conditions of risk to answer short and medium-term questions about feed supply for dairy production.

Research Focus

Studies to collate existing supplementary feeding research in Australia and internationally have produced a series of milk response curves to supplementary feeding under different management regimes. As part of that work, an economic approach was developed to enable farmers and advisors to make more informed decisions about how much supplement to feed at particular times of the year. However, substitute inputs are often available and the response curves can also be used to understand the trade-offs between such inputs when making short-term feeding decisions.

In this project, an approach will be developed and applied to investigate the cost of, and different mixes of, home grown feed and supplement compared with the value of milk produced. Medium-term feed planning decisions under risk and variability will also be examined.

Project Objectives

- To develop and apply a method to analyse the costs of alternative sources and mixes of feeds for short-term dairy cow feeding decisions, under conditions of risk and uncertainty.
- To analyse the economics of tactical (monthly/seasonal) partial mixed ration (PMR) feeding decisions.
- To develop a method and analyse the economics of medium-term strategic feed planning decisions under risk.

Approach

The economics and risk of different sources and mixes of feed on dairy farms will be investigated using farm management analysis; the analysis of choices between alternatives. Farm management analysis and the whole farm approach have previously been used to examine the profitability and risk of strategic changes to dairy farm systems and the impact of changes in operating conditions, such as climate and price variability. This project will build on these methods.

The approach in this project will involve developing a framework to investigate questions about the least cost combination of feed for dairy cows between and within years i.e. how to combine home grown grazed feed with non-grazed feedstuffs, what mixes are potentially profitable and how this mix alters with different conditions.

To contrast between different production systems, a dairy system in the high rainfall region of southern Victoria (Gippsland or south-west Victoria) and an irrigated farm in northern Victoria will be analysed. The analysis will examine the biophysical, economic, financial and risk aspects of changes to the feed supply system on the farm business, as well as evaluate the impact of different cost and price scenarios and seasonal conditions.

An advisory group comprising farmers, a private consultant and experts, as required, will be used to test assumptions used in the modelling, the results generated, and to provide a practical perspective about the changes made to the farm system. Findings from the project will be provided to dairy advisors to adapt and package into an appropriate form for other service providers and farmers, to enable their clients to make more effective short and medium-term feeding decisions.

Contacts

Project Leader

Christie Ho

Email: christie.ho@ecodev.vic.gov.au

Tel (03) 8341 2424

Research Staff

Janna Heard

Email: janna.heard@ecodev.vic.gov.au

Bill Malcolm

Email: bill.malcolm@ecodev.vic.gov.au

Claire Lewis

Email: claire.lewis@ecodev.vic.gov.au

Sam Henty

Email: sam.henty@ecodev.vic.gov.au

Bill Wales

Email: bill.wales@ecodev.vic.gov.au

Marg Jenkin

Email: marg.jenkin@ecodev.vic.gov.au

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