

Evaluating change through feed budgets – the Beef-n-omics experience

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Abstract. *Evaluating the impact of changes to management or technology adoption in beef enterprises can be a complicated process. Decision support software known as Beef-n-omics has been developed to manage the complexity of the evaluation and produce clear outcomes for users. Users of the Beef-n-omics software have made significant management changes as a result of the answers provided by this evaluation.*

Introduction

Determining the impact of new technologies or even management changes can be an issue preventing farmers from making changes within their beef enterprises. The level of risk associated with making a change or using new technologies is of high concern to farmers (Hawkins *et al.* 1982) and can determine if a change actually occurs.

A key factor in proving the value of a change is demonstrating not only the practical implications of change, but also measuring the economic advantages or disadvantages that may occur to the enterprise. This process allows the farmer to better evaluate the risk and make more informed decisions in undertaking possible changes.

Beef-n-omics is a decision support tool developed to help beef producers better evaluate the economic impact of various management changes, and as such, facilitate the speedier adoption of improved or changed practices.

What is Beef-n-omics?

Beef-n-omics has been developed as a method of evaluating the economic impact of new technologies or

management changes in beef enterprises. Beef-n-omics is a software program which models a beef breeding and/or cattle trading enterprise over a 12 month period. Principal inputs to the model are herd characteristics such as cow number, weight, calving percentage, calving time, sale weight and age. These inputs build up a herd profile and are used to determine an enterprise gross margin.

Feed supply comprises the second major input to the Beef-n-omics model. Various pasture and fodder crop production figures can be entered into the model, with capacity to enter up to five pasture types as well as the option of including summer or winter crops. All pasture and crop inputs are calculated for daily growth rate in kg DM/day. These figures are sourced from the PROGRAZE* manual (Bell and Allan 2000), and are calculated on a daily growth rate for each month in the 12 month period. Additionally the program also has the capacity for trial data to be included in the resource file to more accurately account for pasture growth rate variations specific to local areas. These pasture growth figures can be adjusted to reflect different growth rates on any individual month, or by using an adjustment scale which adjusts all growth figures for the 12 month period.

The combination of livestock inputs and feed supply result in the program developing a 12 month feed balance for the beef enterprise.

Using Beef-n-omics

Beef-n-omics is designed to calculate the gross margin and feed balance for an individual beef enterprise. Once the initial inputs creating both feed balance and gross margin have been created ('original scenario'), the program is positioned for use in comparing alternatives which may be applied to the enterprise.

These alternatives can be changes which may include increased feed supply through crops, pastures or supplementary feeds; increased pasture growth through fertilisers or species; or, changes to cattle breeding or management practices which impact on livestock such as calving time, sale weight and value or cow weight. These changes and the expected responses are entered into the program which then calculates a new gross margin for each 'scenario' compared.

In order to fairly compare the changes against the original scenario, the common base for comparison is the feed budget. Until the feed budgets are equal, with a balance the same as the original scenario, the alternative scenarios cannot be fairly compared. A deficit greater than the original indicates the changes would create a situation where animals would not perform as well as the original and pastures would be grazed in an unsustainable manner. Balances less than the original indicates the user has the opportunity to increase animal production, with a possible resulting increase in the overall gross margin.

Beef-n-omics in practice

Producers in New South Wales (NSW) who use Beef-n-omics undertake training in the program as part of a three day course. The course is designed to discuss the practical implications and the physical expected responses of making the changes evaluated through the program. Of key interest is the risk associated with these changes, practicalities of the change and ideas which could also be evaluated through the program. In the past 18 months in NSW, over 110 producers have participated in Beef-n-omics courses. Examples of significant changes which have been evaluated through the program and then actually implemented by producers include cross-breeding British bred cows with a Bos Indicus bull; changed calving time and a re-focus from weaner production to feeder steers. Predicted responses in gross margins in these examples have been of the order of 25 per cent increase.

Conclusions

Beef-n-omics has become a valuable tool for assisting producers evaluate their production options in a grazing environment without taking any actual risk. The evaluation of both the option and the level of risk associated with change have strengthened overall confidence in their implementation of production change.

References

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