Decision support for the adoption of improved pasture

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The presentation will report the results of an exploratory investigation into providing computerised and non-computerised facilities to help research workers explore the implications of hypotheses, synthesise existing knowledge, and evaluate likely costs and benefits of further research into improved pasture in the semi-arid tropics of north eastern Queensland.

There are important differences between decision support and the simulation models, often used in agricultural research. Decision support is concerned only with the inputs, the outputs and the parameters which are likely to affect which alternative is implemented. Decision support is most appropriate for situations in which there is a considerable level of uncertainty related to the alternatives between which choice has to be made.

Decision support, as we used it, is both synthetic and dynamic. It is synthetic in that it represents the whole property. This whole property approach is appreciated by graziers because it can take account of various factors that affect production. It is dynamic in that it covers a sequence of years. This enables graziers to observe where bottlenecks and surpluses occur and to evaluate some alternatives that are difficult to study with a static analysis.

This investigation provided decision support, for evaluating alternatives based on various proportions of native pasture, improved pasture and supplementary feeding. Alternatives were evaluated both in terms of grazing density, branding rate and weight gain and in terms of the consequential financial implications for the whole property.

This investigation has three features that make it different from other work. First a whole property approach is used, because the whole property is the decision making unit in the northern cattle industry. Second, research results are integrated into current property practice, because most properties already have some level of development. Third, the user 'owned' the problem and consequently was the only one ultimately responsible for changes in input and acceptance of output (1).

Properties which participated in this investigation were large in area and encompassed land that was suitable for improved pasture, had their own breeding herd, turned-off steers aged 4-5 years, and had acess to significant non-property cashflow if required.

Conclusions

The experience obtained appears to suggest that modelling and decision support are an appropriate tool with which to support a research worker interested in planning, evaluating, and in some cases designing, research on improved pasture in the semi-arid tropics of north eastern Queensland.

1. Gillard, P. and Monypenny, R. A working paper, 15 December 1986. (Available on request).