Farmer attitudes towards pastures in the cereal-livestock zone of South Australia

J.R. Crosby, W.D. Bellotti, J.S. Kerby and R. Harrison

South Australian Department of Primary Industries. GPO Box 1671. Adelaide 5001 South Australian Research and Development Institute, GPO Box 1671. Adelaide 5001 Harrison Market Research, 376 Gilles Street. Adelaide 5000

Summary. A survey of farmer attitudes towards the role and management of pastures in the cereallivestock zone of South Australia was undertaken, using both qualitative and quantitative techniques.

Several important findings are reported and include:

- the majority of farmers were 'satisfied' with their pastures;
- the level of knowledge and understanding of pasture management was generally high; their pasture observation skills were qualitative rather than quantitative;
- they had no way of calculating the economic benefit resulting from pasture investment.

The implications of these findings for developing effective technology transfer in a mixed enterprise farming system are discussed.

Introduction

On-farm monitoring of pastures across the cereal-livestock zone of southern Australia has revealed that pastures are generally well below their potential in terms of legume density and legume content. This is despite the observation that for most situations, the technology needed to establish and maintain legume dominance is known.

Why is pasture technology not taken up by the majority of farmers? Unless the reasons for the slow uptake are clearly identified and addressed, attempts to accelerate the transfer of pasture technology, however well-intentioned, will remain mis-guided and largely ineffectual.

We sought to discover some of these reasons by conducting a survey of farmers' attitudes and knowledge concerning the role and management of pastures on their farms.

In the light 01' the findings from this survey, we suggest components of a pasture technology transfer program that will be effective and address the needs of farmers.

Methods

The research was undertaken in two stages: a qualitative phase to identify major issues and provide a depth of understanding, and a quantitative assessment to provide a benchmark of current attitudes and practices. The qualitative phase was carried out through a series of focus group discussions with farmers who are growing pastures in rotation with cereal crops, while the quantitative phase involved a telephone survey of 300 farmers in the Lower and Mid Northern and Yorke Peninsula areas of South Australia. Discussion participants and telephone respondents were selected at random from about 5000 cereal growers in these areas. The focus groups were held in July and August 1991 in four different locations to ensure a range of rainfall and pasture types (medic and subclover). The telephone survey was conducted in November 199I.

Results

Qualitative phase

The focus group discussions, involving about 30 farmers, identified five key issues:

- farmers were better informed about pastures than 'we' (research and extension staff) had imagined; different 'mindsets' exist dependent upon whether the farmer considers himself a 'cropper' or `grazier';
- it is impossible to determine the benefit in dollars and cents of investing in pastures:
- the individual approaches by farmers to the management of pastures are many and varied:
- most farmers are familiar with the term 'seed reserves' and realise they are important. but they
 have no quantitative assessment of the effects of seed reserves on the performance of their
 paddocks.

Quantitative phase

Of the 300 cereal growers interviewed, 95% were male and 67% aged between 35 and 59 years One fifth were 60 years or older. Over half (56%) had been farming for more than 25 years. and 52% had left school before or at Year 10. One in ten had obtained qualifications since leaving school.

Property size, the proportion of arable land, and proportion of pastures varied according to location and rainfall. The average size of properties in the 'Low rainfall' northern and eastern area was significantly greater (1763 ha) than the overall average of 1096 ha. The proportion of arable land in pasture was close to 50% for all regions except northern Yorke Peninsula and the high rainfall Mid North. Thus the average area under pasture at the time of the interview was 353 ha. Forty-six respondents (or 16%) indicated that they grow seed for sale to other farmers. Most respondents felt that 1991 had been a 'good year' for pastures.

Slightly more than half (52%) keep records detailing the history of each paddock. and less than half had attended a field day or seminar on pastures, organised by the Department of Agriculture or sonic other organisation.

In general. farmers in the region:

- see the main benefit of pastures as providing feed for sheep (51%). followed by nitrogen fixation (44%), improved soil structure (30%) and 'to give the soil a rest' (29%);
- sec rainfall as the main factor which influences a successful pasture, followed by the timing of the break, weather, weeds and seed reserves;
- stated that they were generally satisfied or very satisfied with the pastures on their property over the last few years, but 71% plan to improve them in the coming year or so;
- will concentrate on increasing legume content (36%), weed control (26%), fertiliser (21%) and new improved varieties when improving pastures;
- were evenly divided (46% convinced. 48% unconvinced) as to the profitability of investment to achieve good pastures;
- place medium priority on pastures relative to other demands fm time and money:
- had spent an average of \$2.771 per year on sowing new pastures as part of crop rotation, and \$3.266 on maintaining and improving pastures over the past three years;
- were evenly divided (43% satisfied, 45% dissatisfied) in their level of satisfaction with the legume content of their pastures, with a strong preference for a legume content of 70-100%;
- encountered a wide variety of weeds and pests in pastures, with control measures mainly spray topping and using a selective herbicide or insecticide:
- could not state an acceptable level of seed reserves to get a good pasture:
- would like more information and advice on pasture management. particularly varieties, weed control and grazing management. and would pay up to \$20 for a Pasture Management Handbook;
- would he concerned if it could he demonstrated that the seed reserves on their farm were low. and would like to learn how to monitor them:
- would support a local discussion group on pasture improvement and/or a self-assessment kit for \$50. but not an assessment and full report on their pastures for \$250.

The results were internally consistent: for example, when asked in two different ways to rank factors for their contribution to good pastures, the rainfall-related factors (the timing of the break and follow-up

rainfall) were ranked highest each time, followed by the level of seed reserves, weeds, pests and type of soil.

Other relationships were also as expected: the higher the priority placed on pastures for example. the more likely the farmer was to be very satisfied with them (including their legume content), and the higher the expenditure on pasture sowing. maintenance and improvement. Farmers growing pasture seed for sale had tended to spend more on pasture establishment and improvements, to want almost total legume content in their pastures, and to keep detailed paddock records. A few regional differences occurred, such as weed control being ranked more highly in the future plans of high rainfall farmers. and pests such as RLEM and lucerne lea being more of a problem in the high rainfall areas and aphids in the low rainfall areas. Finally, those with higher levels of formal education were more likely to keep detailed paddock records, to want more information and advice on pasture management and be willing to pay more for a Handbook on the topic.

Discussion

The research (I) clearly demonstrates that farmers in the cereal-livestock 'zone of South Australia 'see' pastures very differently to the 'experts' in research and extension. Their general knowledge and awareness of the value of legume-dominant pastures is quite good, but they rated pasture management as low to medium priority, know little about the value of seed reserves and are sceptical about the value of investment in pastures.

To the pasture agronomist, a significant important finding of the survey is that despite extensive field surveys which indicate that wheatbelt pastures are performing well below their potential, the majority of farmers are apparently 'satisfied' with the performance of their pastures.

This finding presents a challenge to extension agronomists. Unless farmers believe they have a problem with their pastures. they are unlikely to be motivated to improve them.

In the South Australian wheatbelt, farmers have become accustomed to comparing their cereal yields with the Potential Yield Model (3). This model has provided them with a yield target and has stimulated the identification of yield-limiting factors, and benchmarks to be measured as indicators of progress towards that target. Such targets and benchmarks arc not clearly identified for pastures.

Bellotti and Kerby (1) suggest that the situation with pastures is similar to that of the health of an individual, when external intervention (such as a screening test) is often the only way to turn misinformed self assessment into an informed prognosis, action plan and follow-up. In the pastures situation. external intervention is required to inform farmers that their pastures are below potential. Providing farmers with credible benchmarks with which to compare their pastures may be the nature of that intervention.

One example of pasture self-assessment is to measure potential pasture emergence using a simple ringwatering technique (2). By measuring potential emergence before the break of the season, farmers are able to sow additional seed or manage the paddock more carefully if emergence does not reach the recommended benchmark of 250 legume plants/m2.

Bringing groups of farmers together to demonstrate this technique has created an environment for discussion of general pasture management issues. Further to these demonstrations, a number of pasture discussion groups have been formed, several of which are working with extension staff to validate proposed pasture production benchmarks. Intervention has indeed stimulated action.

A second important finding from the Harrison survey is that many farmers are discouraged from investing in pasture improvement as they are unable to calculate the return of their investment.

Detailed economic analysis of the impact of pasture investment on whole farm profit is difficult. While the production of wool, milk and meat is readily identified, the value of nitrogen accretion, weed control,

disease control and maintenance of soil structure. particularly under grazed pastures is more difficult to quantify. The Midas model goes some way to providing reliable economic information for the Western Australian situation (4)

Until reliable data is widely available, the best allies of the extension officer are those farmers who are opinion leaders in the district, and who are firmly committed to growing good legume pastures. While taking care not to over-expose them, their opinion, experiences and methods should be publicised judiciously through the media and at field days. These farmers are a valuable asset to any extension program.

Acknowledgements

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