

Pasture renewal in the Waikato and Bay of Plenty regions: An overview of farmer practice, experience and attitudes

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Abstract

Pasture persistence and performance, and associated issues such as black beetle, are of central concern to dairy farmers. The Pasture Renewal Survey 2010 aimed to better understand farmers' confidence in their ability to make informed decisions on their pasture renewal practices, their satisfaction with the success of this decision-making and the performance of their renewed pastures over time. In addition, the survey investigated their attitudes to information sources and what barriers they saw to improving pasture performance on farm.

A postal and online survey elicited responses from 776 dairy farmers in the Waikato and Bay of Plenty regions. The four main findings of the work were:

1. Farmers are more confident of their ability to make appropriate on-farm management decisions for renewed pasture than they are of their ability to choose appropriate cultivars and endophyte.
2. Farmers, while generally satisfied with their own success in renewing pasture, reported decreasing levels of satisfaction with renewed pastures over the 3 successive years following renewal.
3. Farmers do not rate information sources very highly in terms of their usefulness in relation to pasture renewal.
4. Weather-related issues and pest-related issues (particularly black beetle) were the most commonly identified barriers to improving pasture performance.

Keywords: farmer confidence, farmer satisfaction, information sources, pasture renewal.

Introduction

Pasture persistence and performance, and associated issues such as black beetle (*Heteronychus arator*), are of central concern to dairy farmers aiming to improve the profitability of their business. This paper reports the findings of an AgResearch project funded by DairyNZ, which surveyed farmers in the Waikato and Bay of Plenty regions on issues relating to pasture renewal practice and decision-making.

Method

A survey was distributed by both email (with a link to an

internet-based survey form) and by post. The sample for the research was drawn from the DairyNZ databases for the Waikato and Bay of Plenty regions. These databases are composed of dairy farm owners, sharemilkers and dairy farm leaseholders who pay a levy based on milk solids under the Commodities Levies Act 1990. Combined, these databases contained a total of 3,746 unique farmers identified by email address and a further 2,095 farmers who had not supplied an email address. All farmers on the databases with an email address were surveyed along with a postal sample of 500 randomly selected respondents who had only provided a postal address.

The survey was divided into five sections:

- Section One gathered information on the respondents and their farm. This included respondent characteristics, location data and physical properties of their farm.
- Section Two focused on current pasture renewal practice on farm including the level of renewal undertaken, methods of renewal and seed bed preparation techniques, as well as measuring farmer confidence in various aspects of pasture renewal practice.
- Section Three assessed farmer satisfaction both with their own success in renewing pastures as well as the performance of their pastures over time.
- Section Four assessed the usefulness of various information sources in relation to pasture renewal.
- Section Five investigated farmers' attitudes to pasture renewal by assessing potential barriers to its uptake.

Results

Survey responses were analysed using frequencies and means. This type of analysis provides a descriptive account of the sample's responses.

Respondents and their farms

A total of 776 surveys were completed and returned, comprising 117 postal responses (23% of total sample) and 659 internet surveys (21% of total sample); 125

farmers were from the Bay of Plenty and 618 from the Waikato region, with the remaining 33 respondents not responding to this question.

The average age of respondents was just below 56 years of age, the oldest being 82 and the youngest being 23 years of age. A total of 694 (89%) respondents were male, while only 75 (10%) respondents were female. One percent of respondents did not answer this question.

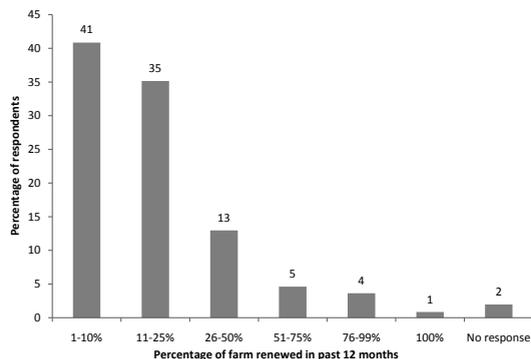
The majority (67%) of respondents defined their relationship to their farm as “owner”, while 12% defined themselves as co-owners. Sharemilkers made up a further 17% of the sample. Reflecting the predominance of owners and co-owners in the sample, over 81% ($n=631$) of respondents had more than 15 years of experience in dairy farming. Farm owners are likely to be over represented in the sample due to the sampling frame used.

Current pasture renewal practice

The majority of respondents ($n=717$) renewed pastures, with only 7.6% ($n=59$) of respondents not currently renewing pastures on their property. Of those who currently renew pastures, approximately 76% estimate that they have renewed up to 25% of their farm within the past 12 months (see Fig. 1, which presents the categories of responses available to respondents within the survey). A further 13% of respondents had renewed between 26% and 50% of their farm, while only 10% had renewed more than 50%. Six farmers (1%) had renewed 100% of their property in the past year.

A total of 594 respondents indicated which cultivar they had been most satisfied with. 64 farmers wrote two or more cultivar names for the cultivar with which they were most satisfied; 32 answered “none”, 18 answered “don’t know” and three indicated they were “waiting”. A further three responses did not make sense in the context of the question. A total of 462 responses were received for the cultivar with which farmers had been least satisfied. In common with the cultivar with which

Figure 1 Percentage of farm renewed in the past 12 months



farmers were most satisfied, nine answered “none” and 31 answered “don’t know”. However, pointedly, 34 respondents answered “all/most of them”. Clear best and worst performers were identified, however several cultivars ranked highly in both categories. Certain responses also highlighted some confusion as to what was meant by the word cultivar. Specifically, 27 farmers named only an endophyte when asked with which cultivar they were most satisfied, and 55 farmers named only an endophyte when asked with which cultivar they were least satisfied.

Respondents were asked which seed bed preparation techniques they had used on their farms, including discing, ploughing, rotary hoe, power harrow and direct-drilling. Farmers had often used a combination of these techniques, with discing and power harrow being the most often used, and direct-drilling being the least used.

Farmer confidence in pasture renewal practice

Using a scale of 1-7, where 1 is “not at all confident” and 7 is “very confident”, farmers were asked how confident they were with five key aspects of the pasture renewal process. The results demonstrated that farmers were, on average, less confident in selecting suitable cultivars and endophytes, and more confident in making decisions “on-farm”, including the selection of seed bed preparation techniques and appropriate management techniques both in the establishment phase and in grazing management (Fig. 2). This suggests that farmers lack appropriate or easily understandable information to assist their decision-making regarding cultivar and endophyte choice.

Satisfaction with current success in renewing pasture and with the performance of renewed pastures

While 60% of farmers surveyed are satisfied with their current success in renewing pasture, compared with 25% who are dissatisfied, farmers were much less satisfied

Figure 2 Respondents’ mean levels of confidence in relation to a range of decisions associated with pasture renewal

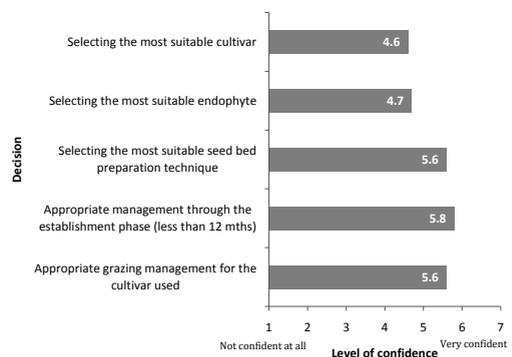
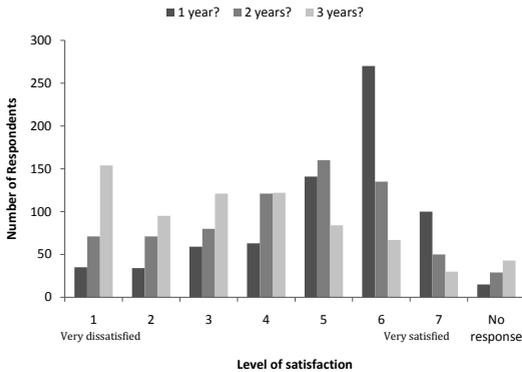


Figure 3 Respondents' levels of satisfaction with the performance of renewed pastures after 1, 2 and 3 years



with the performance of their renewed pastures in the 3 successive years immediately following renewal. Fig. 3 highlights an increase in the number of respondents having lower levels of satisfaction in the 3-year period following renewal (i.e. 1, 2 and 3), coupled with a declining number saying they are satisfied (i.e. 5, 6 and 7).

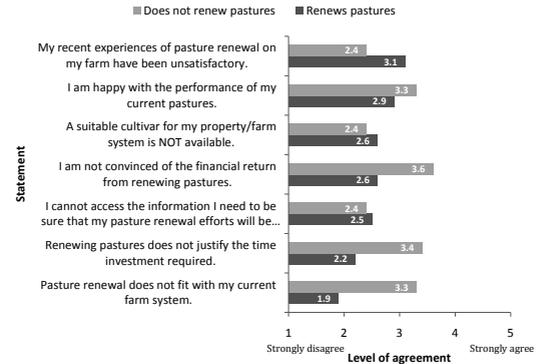
Information sources

Respondents were asked which information sources they found useful, using a scale from 1, being not useful at all, to 7, being very useful. The average scores for the given information sources suggests that no information sources were seen as particularly useful, with almost all of them falling mid way along the scale (between 3 and 5). The information source rated the most useful on average was on-farm consultants (4.9), followed by seed merchants and researchers/scientists (both 4.7). The sources rated least useful were other websites (non-specific) (2.7) and mail publications (3.5). These two sources, while not considered particularly useful, did offer some interesting feedback into the various publications and websites which farmers use (see Kelly & Smith 2011).

Farmer attitudes to pasture renewal

To develop a better appreciation of farmers' attitudes to pasture renewal more generally, and to understand what the barriers and opportunities are to improving pasture renewal practice and as a result pasture persistence, farmers were asked to measure their agreement with a number of statements related to pasture renewal. This line of questioning was open to both those farmers who renewed pasture and those who do not. Respondents were asked to indicate their level of agreement with each statement on a 1-5 scale (1= Strongly disagree, 2= Disagree, 3= Neutral, 4 = Agree, 5 = Strongly agree). The responses of the two groups (those who renew

Figure 4 Respondents' (those who renew pastures and those who do not) level of agreement with statements associated with pasture renewal



pastures and those who do not) were averaged and are presented as Fig. 4.

While there was little variation in the average scores for many of the statements, there are clear differences for those questions which deal with the financial return from pasture renewal, the investment of time required to renew pasture, and the “fit” of pasture renewal to individual farm systems. In each of these cases, the group of farmers who do not renew pastures agree less strongly than those who do renew, that pasture renewal meets these criteria and, thus, the commitment in terms of resources (Fig. 4).

Factors limiting improvement of pasture performance on farm

At the conclusion of the survey, farmers were asked to identify the two most important factors limiting improvement in pasture performance on their farm. In addition to providing farmers with an opportunity to comment on the question, the question was also taken as an opportunity for farmers to offer more than simple one-word, or one-sentence, answers.

Weather and climate-related issues, including rain/moisture, climate, drought and dry-weather, are prominent in this analysis and when taken together across both limiting factors A and B were mentioned 393 times. Pests were also cited as a key limiting factor to pasture performance. In total, 143 people mentioned black beetle specifically in one of their responses. However, when the ‘Pests (general)’, ‘grass grub’, and ‘clover weevil/flea’ responses are included, the number of mentions referring to pests increases to 326. It is clear that the combination of weather and climate-related factors and pest issues are considered to be the main limiting factors to improving pasture persistence on-farm.

Discussion

The above analysis of responses to the Pasture Renewal Survey 2010 provides an overview of many of the issues farmers are facing in relation to pasture persistence in the Waikato and Bay of Plenty regions. In particular, the following points warrant further attention.

There is considerable confusion around many core aspects and components of pasture renewal. This includes the difference between cultivar and endophyte as well as how these two things combine under various proprietary brand names. As a result, farmers often lack confidence in the choice of appropriate endophyte and cultivar for their farm system and the physical characteristics of their property.

While farmers are largely satisfied with their own success in renewing pasture, they are less satisfied with the persistence of these renewed pastures over time. Understanding the combination of factors which influence pasture persistence is obviously central to

improving these levels of satisfaction.

Farmers appear to be struggling to find useful sources of information on pasture renewal. The fact that no single source stands out as being particularly useful suggests that this may be as much a problem of inconsistent or confused messages as a failure of individual organisations to provide accurate or useful information in a form that is accessible and understandable to farmers.

Finally, while weather and climate-related issues rank highest among the issues farmers perceive to be limiting improvement in pasture performance, pests, and in particular black beetle, are pertinent issues where intervention might be usefully targeted.

REFERENCES

Kelly, S.; Smith, E. 2011. Pasture Renewal in the Waikato and Bay of Plenty Regions. Report prepared for DairyNZ by AgResearch Ltd, January 2011.