



## Down To Earth Research

ABN: 38 873 356 803  
Tel: (03) 9708 8008  
Fax: (03) 9787 0367  
Email: [admin@dter.com.au](mailto:admin@dter.com.au)  
Web: [www.dter.com.au](http://www.dter.com.au)

# Dairy Australia

## Fert\$mart Program Evaluation

### Report

**June 2015**

**Primary contact for Dairy Australia:**

Monique White  
Catherine Phelps

**DTER report authors:**

Daniel Watson  
Pamela Watson



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## **Acknowledgements**

Down To Earth Research would like to thank all the dairy farmers and advisers who participated in the evaluation. Their assistance and insights have been invaluable.

We would also like to thank the efforts of the Dairy Australia program co-ordinators in providing DTER with any details and information requested.



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## Fert\$mart Program Evaluation

### Executive Summary

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## Executive Summary

### Background and methodology

The Fert\$mart program has been developed by Dairy Australia (DA) to ensure dairy farmers are provided with appropriate knowledge and support to make good decisions about fertiliser application, thereby reducing nutrient runoff from their farms while still ensuring maximum pasture growth.

Recent delivery of the program has been jointly funded by the Australian Government's Caring for Our Country initiative and DA, with some input from the Victoria Department of Environment and Primary Industries (now Department of Environment, Land, Water and Planning) and the National Centre for Dairy Education (NCDE).

Fert\$mart has been delivered to dairy farmers by specially trained industry advisers under the supervision of Dairy Australia's technical experts. Dairy farmers have typically been invited to participate in the Fert\$mart program by the advisers or Dairy Australia representatives. By using this approach, the program has been able to target those dairy farms where the greatest benefits to the environment can be realised. The sample does however include some farmers who approached an adviser. Each farm participating in the program was provided with a Fert\$mart Plan, drafted by advisers and independently accredited.

To ensure the program achieves its goals and that future programs can benefit from program delivery learnings, an evaluation has been conducted. The evaluation is based on telephone interviews with 7 retail and private business advisers involved with the program and 20 dairy farmers undertaking the Fert\$mart program. All interviews were conducted between May and June 2015, using a semi-structured topic guide for advisers and a more formal questionnaire for dairy farmers (see Appendix).

Respondents were selected randomly from lists provided by Dairy Australia's technical specialists. The Murray Dairy, GippsDairy, Dairy NSW, Dairy SA and Dairy Tas regions are all represented in the sample.

### Evaluation results: Key findings

#### Dairy farmer findings:

#### Fert\$mart Program participant profile:

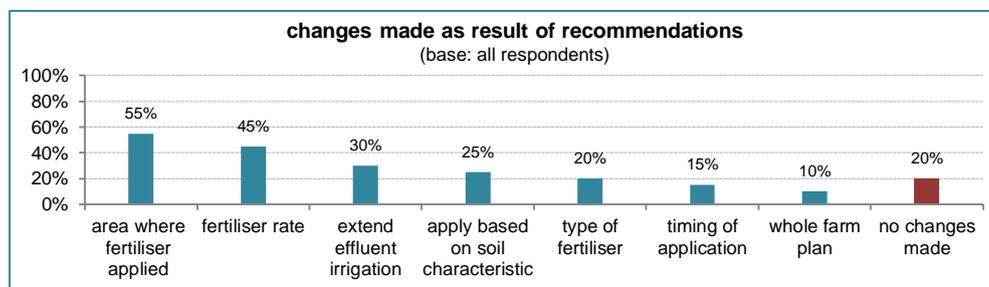
- ❖ Survey results suggest that participants in the Fert\$mart program are younger farmers with larger herds and enterprises that are more likely to be in an expansion phase than the 'average' dairy farmer.

measure	Fert\$mart program participant average	national average <sup>(1)</sup>
Age (years)	45	52
Milking herd size (cows)	382	302
In an expansion phase	47%	25%

- ❖ Approximately half the dairy farmers interviewed participated in the Fert\$mart program to improve their understanding of nutrient management, with many of this group particularly interested in seeing results from soil testing and identifying ways to improve fertiliser use efficiency on their farm. The key driver for others however was the receipt of subsidised soil testing.

#### Program impact on practice change and outcomes:

- ❖ Participation in the Fert\$mart program has resulted in the majority of participants implementing their Plan's recommendations on farm. Changes made as a result of Fert\$mart Plans are shown below:



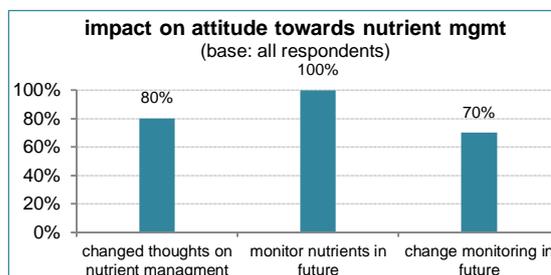
- ❖ Four of the 20 respondents interviewed have no plans to make changes as a result of Fert\$mart. This is due to the following:
  - Cost of upgrading effluent infrastructure
  - Concern over the low rate of fertiliser application recommended
  - Inability to alter timing of fertiliser application due to paddocks being too wet for truck entry during winter
  - Use of only organic fertilisers.

<sup>(1)</sup> Based on results from Dairy Australia's National Dairy Farmer Survey 2015

- ❖ Where participants have implemented changes and there has been sufficient time elapsed since incorporating them, all respondents have reported positive outcomes. Improvements in pasture growth, more efficient and cost effective use of fertiliser and improved soil health have been the main outcomes observed on respondent farms.

### Impact on knowledge and attitude:

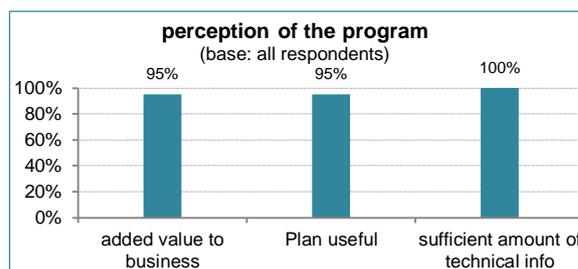
- ❖ A very high 80% of respondents said Fert\$mart changed their attitude towards nutrient management, typically by making them more conscious of nutrient loads and only applying fertiliser where it is needed. Many now understand the benefit of undertaking regular soil testing, whereas they may not have done so in the past.
- ❖ Additionally, all respondents now plan to monitor nutrients in the future and the program has resulted 70% of respondents changing their approach to nutrient monitoring by soil testing more regularly and testing a larger proportion of the farm than previously.
- ❖ Respondents were asked to rate their knowledge of fertiliser efficiency and the impact of soil health on pasture growth prior to participating in Fert\$mart and post participation. The table below reveals the program's substantial impact, particularly in fertiliser use efficiency:



measure	average scores out of a possible 10	
	pre participation	post participation
Knowledge of fertiliser use efficiency	5.5	7.4
Knowledge of the impact that soil health has on pasture growth	6.1	7.3

### Perceived value of Fert\$mart:

- ❖ The Fert\$mart program is perceived to have added value to all except one respondent farm business. Knowledge of where to apply fertiliser and understanding the nutrient status of paddocks through soil testing were the main benefits nominated.
- ❖ Of note, one respondent did not find the program as valuable as others due to already being focussed on nutrient management.
- ❖ A very high 95% of respondents rated their Fert\$mart Plan *very or fairly* useful and all respondents believe they were provided with a sufficient amount of technical information. Receipt of a farm nutrient map and a fertiliser program to maximise efficiency are most commonly mentioned as useful aspects of the Plan.
- ❖ There is evidence in the survey findings that some dairy farmers believe recommended nutrient levels are too low to effectively grow pastures.
- ❖ Due to the highly technical nature of information provided in Fert\$mart Plans, some respondents required explanation by the adviser. Overall however, respondents found the Fert\$mart program easy to undertake and none felt there was a need to streamline any aspect of it.
- ❖ Despite widespread satisfaction with the Fert\$mart program almost half of the farmers interviewed are unlikely to repeat the program in the future, typically due to a perception they are already practicing what the program would cover or would need to see new information and concepts included in the program to make it worthwhile. Notably three quarters of respondents have not recommended the program to others, mostly due to belief the program has limited availability for farmers.



### Suggestions for improvements in future programs

- ❖ Once prompted for a suggestion to improve Fert\$mart, half the respondents did so. The most common suggestions included the development of a Fert\$mart 'App' or computer program and/or the inclusion of effluent testing to gain a better understanding of its nutrient content.
- ❖ For some participants, being able to compare their own data with regional data is desirable and consequently they suggested including this information in Fert\$mart Plans along with local case studies.

- ❖ Two of the 20 farmers interviewed said they would prefer their Fert\$mart Plan to be simplified and combined with feedback from advisers.

#### Adviser findings:

- ❖ Advisers typically became involved in the Fert\$mart program due to believing it would provide some value to dairy farmers. Two of the younger advisers interviewed felt Fert\$mart accreditation may provide them with a competitive advantage and assist in attracting clients in the longer term.
- ❖ Advisers felt well supported by the Dairy Australia technical specialists and felt positively about the knowledge and tools the Fert\$mart program delivers to farmers. Provision of a structured plan with easy to read data and improvements in farmer awareness and knowledge were the main positive aspects mentioned.
- ❖ While there is widespread satisfaction of the structure and tools provided in Fert\$mart, there is some demand among advisers for an 'App' to assist delivery of the program and inclusion of effluent testing.
- ❖ Some of the advisers interviewed suggested that due to the high level of technical information and detail required for accreditation of the farm Fert\$mart Plans, considerable time and effort needs to be expended to produce them. These advisers said the amount of funding available does not reflect this and they would require additional funds to provide similar services in future.
- ❖ The high level of technical information included in the Plans also means advisers have, in some cases, needed to spend additional time explaining the content in more simple terms to dairy farmers.
- ❖ Anecdotal comments made by one of the advisers interviewed suggests not all advisers and dairy farmers accept the low level of soil nutrient and fertiliser rates recommended by Fert\$mart, believing that at this level, soils will lack the necessary fertility for good pasture growth.

#### Conclusions and recommendations

- Fert\$mart has successfully targeted participants who are younger, have larger herds and are expanding their enterprise. These farms are likely to derive the greatest benefit from the program while achieving environmental benefits.
- It is clear the Fert\$mart program has improved the nutrient management knowledge of many participants and has stimulated greater proactivity with soil testing and improving fertiliser use efficiency.
- Satisfaction with the program is widespread among both advisers and dairy farmers, resulting in changed on-farm practices to better manage nutrient loads.
- Evaluation results suggest that not all Fert\$mart participants will attend follow up programs within a 2 year time frame. While some would consider attending if there is a longer time lapse, others feel they have already gained sufficient knowledge to reduce nutrient loss. To increase participation at follow-up programs, it may be worth promoting the fact that additional knowledge and savings can be gained, with clear information on what the program will cover.
- Although delivery methods varied across the regions, an interesting finding is that outcomes have been similar. While this may be due to the level and consistency of support and training provided to advisers, it is also evident that advisers have been diligent in their approach. This has meant they have spent considerable additional time and effort to deliver the program resulting in some suggesting they would need to be more fully compensated for them to remain interested in delivering the program. Further investigation may be required to explore this mindset more fully.
- Although the majority of Fert\$mart participants appreciated the detailed information provided in their Plans, others said they would have preferred a simplified version. To cater for this latter group, it may be worth considering a less technical version or a way to assist people to better understand their Plan's content.
- There are some concerns relating to belief the recommendations for N and P levels are low and it may be useful (if not already done) to provide advisers with copies of research conducted as well as facilitating contact with researchers as required.



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# Dairy Australia

## Fert\$mart Program Evaluation

### Main Evaluation Report

**June 2015**

**Primary contact for Dairy Australia:**

Monique White  
Catherine Phelps

**DTER report authors:**

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# 1. Background and methodology

## Background

The Fert\$mart program was initiated by Dairy Australia and developed under direction from the Australian Dairy Industry Nutrient Management Guidelines Steering Committee. Fert\$mart has been jointly funded by Dairy Australia and the Federal Government through the Caring for Our Country initiative. Some additional resources were provided by other organisations including the Victorian Department of Environment and Primary Industries (DEPI) (now the Department of Environment, Land, Water and Planning and the National Centre for Dairy Education (NCDE).

Fert\$mart was developed to create better awareness of the principles and practice of fertiliser use efficiency and soil health on Australian dairy farms. It is based on scientific research<sup>(2)</sup> that has identified the lowest levels of soil nitrogen and phosphorous required to effectively maximize pasture growth while limiting the potential for nutrient run-off though applying more nutrient than is required.

Fert\$mart has been delivered by industry advisers after being fully trained by Dairy Australia's technical experts. The Fert\$mart Plans they developed have undergone an independent accreditation process before being given to dairy farmers. Advisers have made themselves available to discuss the Plans and assist with implementation of recommendations.

In some situations dairy farmers participating in the Fert\$mart program were selected by Dairy Australia representatives or regional farm advisers. This approach allowed the program to target farms likely to derive the most benefit in terms of both pasture growth, costs and environmental outcomes. Additionally the sample includes a group of people who expressed interest in participating.

To determine and measure the impact of Fert\$mart, Dairy Australia has undertaken an independent evaluation of the program.

## Methodology

The Fert\$mart evaluation comprises 2 components:

Interviews with retail and private business agronomists providing Fert\$mart Plans:

- A total of seven in-depth interviews were conducted with advisers involved in the Fert\$mart program to capture their perception of aspects of the program that worked well for farmer participants and advisers and identify any areas for improvement.
- Interviews were conducted via telephone by senior Down To Earth Research personnel between May and June 2015, with an average interview length of approximately 20 minutes.

Interviews with participants receiving their Fert\$mart Plan approximately 12 months ago:

- To gain an understanding of all aspects of the program and its impact on farmers, 20 in-depth interviews using a semi structured questionnaire were conducted with farmers participating in the Fert\$mart program.
- Interviews were conducted via telephone by senior Down To Earth Research personnel between May and June 2015, with an average interview length of approximately 15 minutes.

Sample selection:

Dairy farmers were selected randomly from lists provided by Dairy Australia's technical specialists and represented the Murray dairy, GippsDairy, Dairy NSW, Dairy SA and Dairy Tas regions:

	total	murray dairy	gipps	dairy nsw	sa	tas
# interviews with advisers	7	2	1	1	2	1
# interviews with farmer participants	20	6	5	1	5	3

<sup>(2)</sup> Described in Dairy Soils and Fertiliser Manual: Australian Nutrient Management Guidelines' 2013

## Farmer interview findings

### 2. Farmer demographics

measure	% mentioning (base: all respondents)	
	NDFS 2015 (n=1003)	Fert\$mart 2014-15 (n=20)
<b>Age:</b>		
18-39 years	15%	32%
40-59 years	56%	63%
60+ years	29%	5%
Average age (years)	52	45
<b>Gender:</b>		
Male	85%	100%
Female	15%	0%
<b>Dairy enterprise phase:</b>		
Expansion	25%	47%
Steady, where want to be	39%	42%
Steady, unable to expand	26%	11%
Winding down	9%	0%
<b>Herd size:</b>		
Small (<150 cows)	19%	5%
Medium (150-300)	50%	47%
Large (301-500)	19%	26%
X-Large (501-700)	6%	5%
XX-Large (700+)	7%	16%
Average herd size	302	382
<b>Grazing land:</b>		
0-100 ha		11%
101-200 ha		63%
201-300 ha		11%
301-400 ha		5%
400+ ha		11%
Mean		213
<b>Consultant type:</b>		
Private business		60%
Retail adviser		40%

*\*Caution: very small sample sizes. Data included for interest only.*

## Results

- Compared to the 'average' dairy farmer<sup>(3)</sup>, Fert\$mart respondents are (on average) younger by 7 years, have larger dairy herds (80 milking cows) and are more likely to be in an expansion phase (greater by 22 points).
- Sixty percent (60%) of respondent Fert\$mart Plans were produced by an adviser in private business and 40% by an adviser associated with a retail company.

## Implications

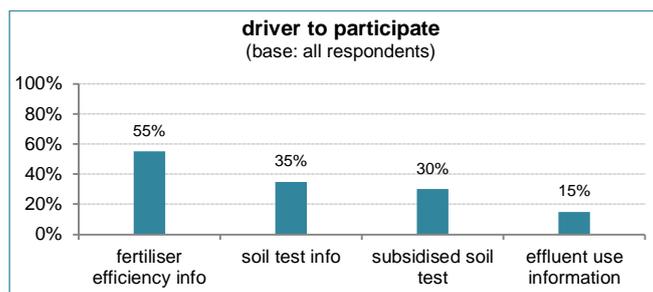
Respondents selected to participate in the program appear to be younger, have larger herds and be expanding their business and therefore will derive the greatest benefit from participating in the Fert\$mart program. These farms are likely to produce the most benefit to the environment via increased fertiliser efficiency and associated reduced nutrient runoff.

<sup>(3)</sup> Based on Dairy Australia's National Dairy Farmer Survey 2015 results

### 3. Drivers for farmers to participate in the program

Question asked:

Q. What motivated you to become part of the program?



\*Caution: very small sample sizes. Data included for interest only

## Results

- Respondent participation in the Fert\$mart program was typically driven by an interest in learning ways to improve knowledge and understanding of nutrient management, namely:
  - Improvement in efficiency of fertiliser use on farm (55%):

*"We were trying to get an understanding of where we were at with our fertiliser program and get an understanding of what we needed to do in the future and thought the Fert\$mart program could assist."*
  - Soil testing information (35%):

*"We saw the soil testing and thought it was a great opportunity to give a boost to our program."*
  - Ways to improve effluent use efficiency (15%)
- Subsidised soil tests motivated almost one third (30%) of respondents to participate in the program, but it should be noted only 2 respondents mentioned this reason exclusively:

*"We were hoping to receive cheaper soil tests. We use a lot of organic fertiliser and haven't been able to soil test the whole farm yet."*

## Implications

Evaluation results clearly show that participation in Fert\$mart has been driven by an interest to improve knowledge of nutrient management, resulting in more effective and efficient use of fertilisers.

There are some dairy farmers for whom subsidised soil testing has been a key motivator, but this is typically only 1 of 2 influencing factors.

## 4. On farm change

Questions asked:

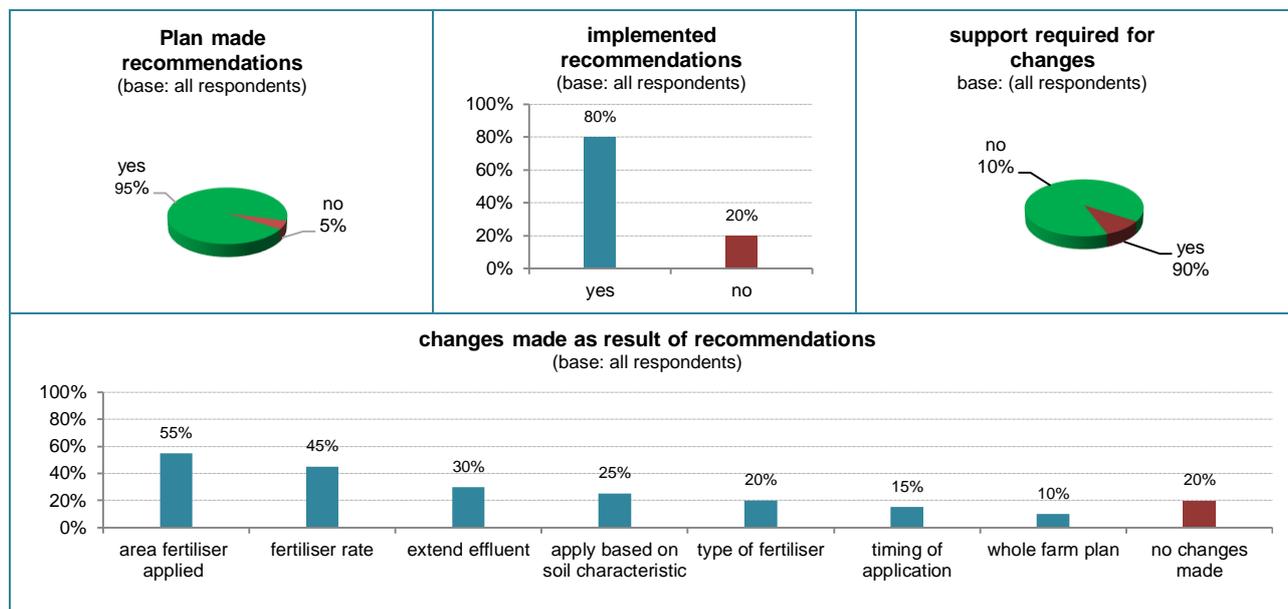
Q. Did the Fert\$mart plan for your farm's nutrient management make any recommendations?

Q. What did you think of the nutrient management recommendations?

Q. Have you implemented any of the recommendations made? Q. What changes have you implemented?

Q. If no changes made: Was there a reason you didn't implement the recommendations?

Q. Is there any additional information or support you require to help you to implement changes?



\*Caution: very small sample sizes. Data included for interest only.

## Results

- Fert\$mart Plans provided recommendations to improve nutrient management on all but one of the respondent farms. This farmer has replaced mainstream fertilisers with organic fertilisers.
- As a result of recommendations, 80% of farmers interviewed have implemented or plan to implement changes on their farm, including the following:
  - Changing the areas or zones that fertiliser is applied (55% of respondents)
  - Changing nutrient type or combinations, or the rate at which they are applied, for example using P & K rather than just applying N or decreasing the amount of P (45%)
  - Extending effluent application to different paddocks (30%)
  - Applying fertiliser based on soil characteristics (25%)
  - Following whole management plan recommended by program (10%)
- Four respondents said they do not plan to make changes as a result of the program, citing the following reasons:
  - Cost of implementing changes to the effluent system
  - Disagreeing with the fertiliser rate recommended in the Plan (One participant felt the level of N and P recommended may impede pasture growth and production)
  - Unable to change timing of fertiliser application due to being too wet throughout winter
  - Changing farm practices to only organic or alternative fertilisers.
- The vast majority of respondents (90%) said do not require extra information or support to implement recommendations made. Two respondents said they would require funding to make the recommended infrastructure changes on farm.

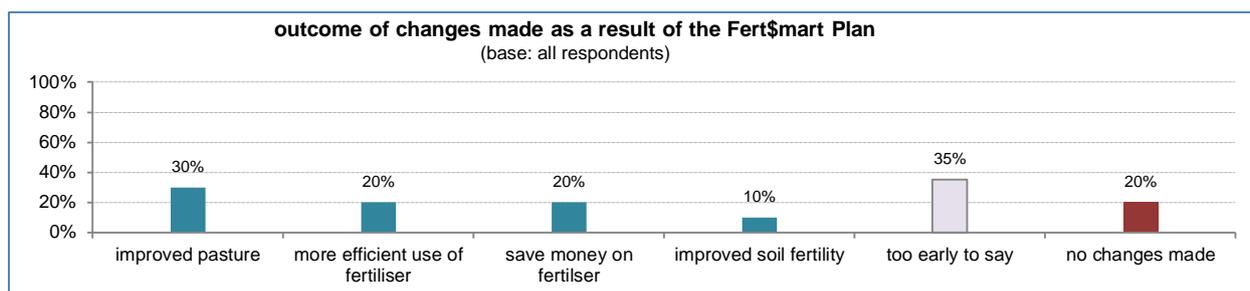
## Implications

Fert\$mart is successfully encouraging dairy farmers to change their fertiliser use, thereby reducing the risk of nutrient run off and maximising efficiency of pasture production. Where infrastructure change is needed however, some form of funding may be required to facilitate change.

## 5. Outcome of changes made as a result of the Fert\$mart program

Questions asked:

Q. What has been the outcome of changes made?



\*Caution: very small sample sizes. Data included for interest only.

### Results

- All respondents able to measure the impact of changes made due to recommendations have seen improvements on farm, namely:
  - Improvement in pasture growth/production (30% of respondents mentioning):  
*"Certainly where we are putting effluent on the paddocks further from the house you can see a marked difference in the pasture growth."*
  - More effective/efficient use of fertiliser (20% mentioning):  
*"We didn't realise how low the Potassium was across the farm, so we have now stopped buying in Phosphorous and are buying more Potassium. We are be able to grow more grass, but we won't actually save any money on fertiliser."*
  - Decrease in the amount of money spent on fertiliser (20% mentioning):  
*"We are now spending less on fertiliser – we are 25% down. Because we have a feedpad we are now using that effluent to fertilise different areas of the farm."*
  - Improved soil fertility (10% mentioning):  
*"I wouldn't say the program has changed the amount of money or fertiliser used but it's changed areas that I put it on which has resulted in better soil fertility and should lead to better pastures in the long term."*
- More than one third (35%) of respondents were still in the process of making recommended changes or felt it was too early to see results from changes implemented.

### Implications

Clearly the Fert\$mart program is achieving its objectives, with changes implemented on farm resulting in more efficient and effective fertiliser use resulting in greater pasture growth.

## 6. Future nutrient monitoring

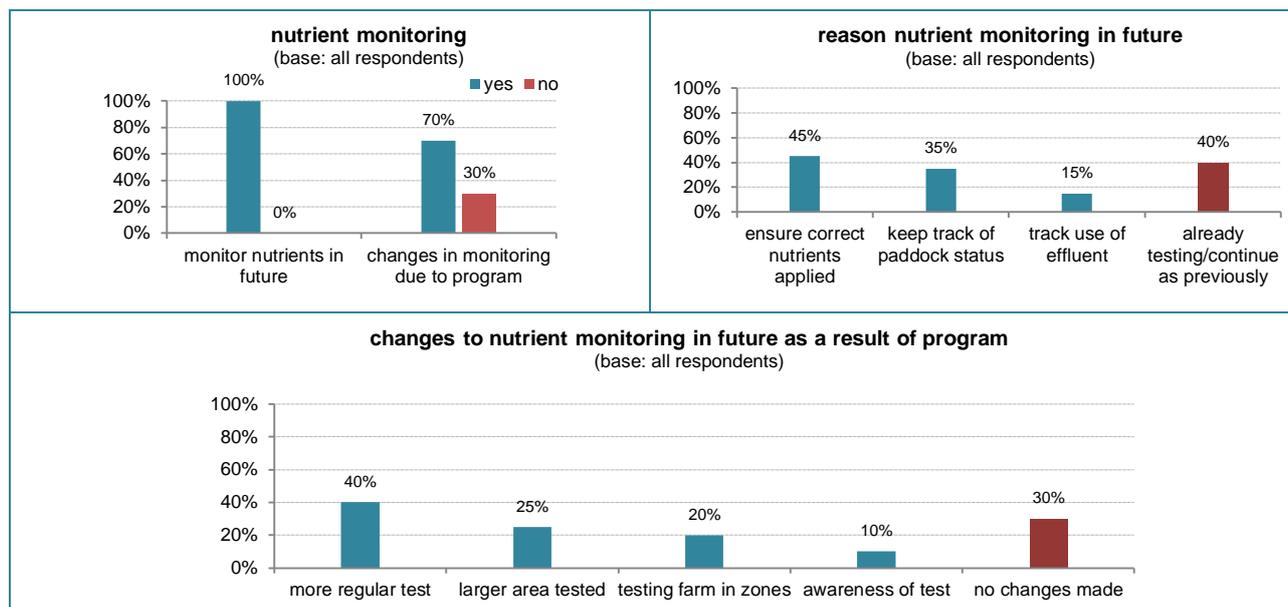
Questions asked:

Q. Are you likely to continue monitoring nutrient levels on the farm in the future?

Q. Why is that?

Q. Has Fert\$mart changed your approach to monitoring nutrient levels?

Q. In what way?



\*Caution: very small sample sizes. Data included for interest only.

## Results

- Encouragingly, all respondents plan to monitor nutrient levels in the future, typically to ensure fertiliser is only applied where needed (45% of respondents mentioning), assess nutrient status of paddocks (35%) and/or observe changes in paddocks where effluent is applied (15%).
- Many of the respondents interviewed (40%) were already monitoring nutrient levels and soil testing prior to program participation and will continue to do so in the future:
 

*"We have been soil testing for 15 years with our agronomist – we do it yearly – you have to or you don't know what it happening on the paddocks."*
- As a result of participating in the Fert\$mart program, nutrient monitoring practices will be altered on almost three quarters (70%) of respondent farms. Changes include:
  - More regular soil testing (40%)
  - Soil testing a larger proportion of the farm than previously (25%)
  - Monitoring nutrients in zones identified by the program (20%)
  - Greater awareness of necessity to monitor nutrients (10%)
- On farms where no changes to nutrient monitoring are planned (30% of respondents), all respondents are currently soil testing regularly and feel they are already progressive in terms of nutrient monitoring.

## Implications

The Fert\$mart program has successfully created awareness of the need to continue monitoring nutrients and applying fertiliser only as required.

## 7. Perceived usefulness of Fert\$mart Plan

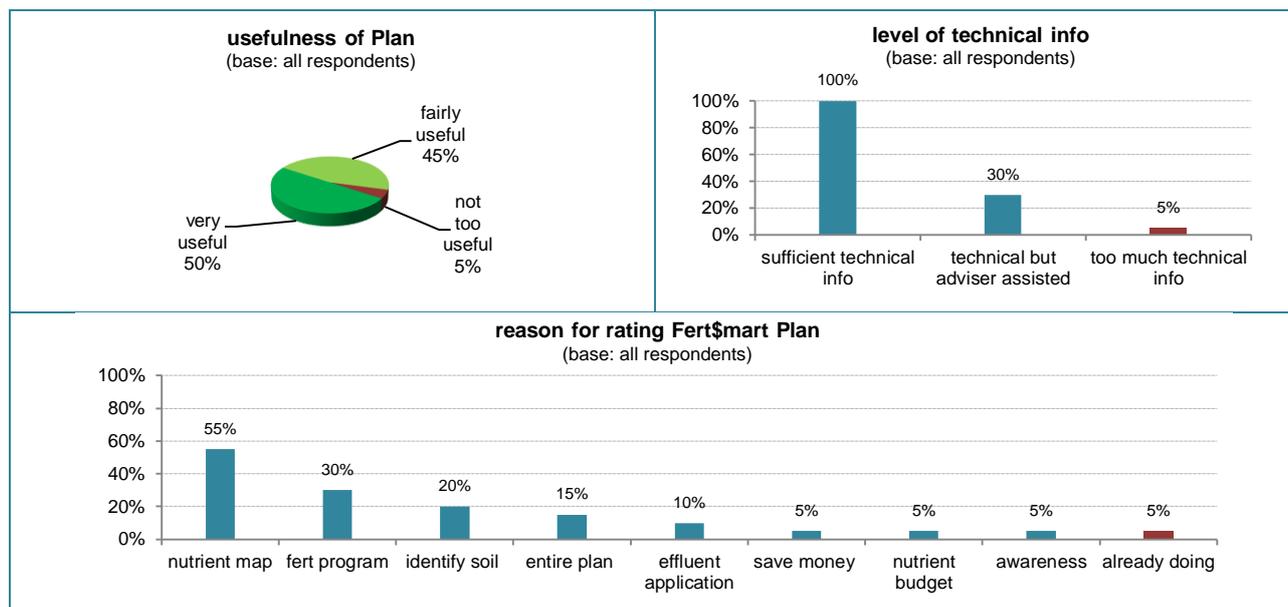
Questions asked:

Q. How would you rate the Fert\$mart plan in terms of usefulness for you? Would you say it is...

Q. Why do you say that?

Q. Did the Fert\$mart plan provide a sufficient amount of technical information? If no: How could it be improved?

Q. Was there any aspects of the plan that were too technical?



\*Caution: very small sample sizes. Data included for interest only.

## Results

- Almost all (95%) respondents perceive their Fert\$mart Plan to be *very* (50%) or *fairly* (45%) useful. The only respondent rating the Plan *not useful* has been working on fertiliser efficiency and soil testing with their agronomist for 15 years and felt Fert\$mart did not offer anything additional.
- While the level of technical information provided in the Fert\$mart Plans was deemed 'sufficient' by all respondents, 30% required assistance from their adviser to fully understand it. One respondent found the level of technical information too great, stating:

*"To help understand the Plan, the course could have easily run another day. It's too much to put in a two day course. Include the same information, but spread out and slow the course down and talk a bit more about each subject."*

- Positive aspects of the Fert\$mart Plan mentioned by respondents, included the following:
  - Receipt of a farm nutrient map (55% of respondents mentioning):
 

*"The whole farm map was the most useful aspect, particularly the indicators that show you where you are excelling and where you are deficient."*
  - Provision of a fertiliser program to maximise efficiency (30% mentioning):
 

*"The Plan influenced the type of fertiliser we put on and where we put it on."*
  - Identification of soil characteristics (20% mentioning):
 

*"Was really useful to see the different soil types on different areas of the farm."*
  - Provision of a range of useful information (15% mentioning):
 

*"We found heaps of useful stuff, the whole Fert\$mart plan was good. Our farm was topped up to the hilt with phosphorous so we don't need to apply any more, we weren't aware that would be the case."*
  - Areas to apply effluent (10% mentioning):
 

*"The Plan showed us that there was a lack of fertility in the back paddocks, compared to the ones closer to the dairy, so we have been carting effluent to those paddocks."*

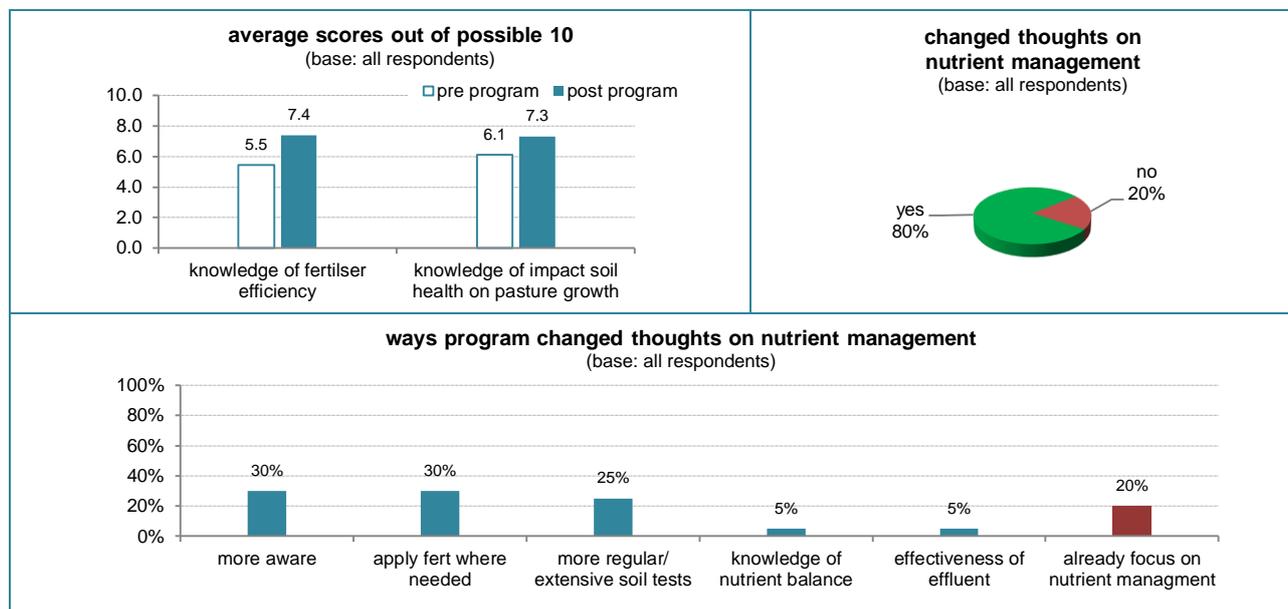
## Implications

Clearly the information included in Fert\$mart Plans has assisted the dairy farmers receiving it. The high degree of technical information included means that some people require assistance to fully understand it, highlighting the importance of providing follow-up meeting with advisers to discuss any aspects needing clarification.

## 8. Knowledge and awareness of nutrient management

Questions asked:

- Q. Prior to participating in the Fert\$mart program how would you have rated your knowledge on a scale of 0 to 10 where 0 = 'no knowledge' and 10 = 'know everything there is to know' about the following ...
- Q. Now you have participated in the Fert\$mart program how would you have rated your knowledge on a scale of 0 to 10 where 0 = 'no knowledge' and 10 = 'know everything there is to know' about the following ...
- Q. Has participating in the Fert\$mart program changed your thinking about nutrient management in any way at all?
- Q. if yes: In what way? If no: Why is that?



\*Caution: very small sample sizes. Data included for interest only.

## Results

- When respondents were asked to rate their knowledge prior to and after participating in the program for two key measures, the following results were evidenced:
  - Knowledge of fertiliser use efficiency*: Average rating after Fert\$mart program participation 7.4 out of a possible 10 points (up substantially, from a rating of 5.5 pre-program)
  - Knowledge of the impact that soil health has on pasture growth*: 7.3 out of a possible 10 points (up from a rating of 6.1 pre-program)
- The Fert\$mart program has changed perception of nutrient management among 80% of respondents, mainly through increasing knowledge and awareness in the following areas:
  - More conscious of nutrient management on farm (30% of respondents mentioning)
  - More focused on applying fertiliser only to areas where it is needed (30% mentioning)
  - Understanding the need for more regular or more extensive soil testing (25% mentioning)
  - Knowledge of nutrient balance improved (1 respondent mentioning)
  - Understand the effectiveness of using effluent (1 respondent mentioning)
- There was no change in perception of nutrient management among 4 respondents, however it should be noted that each of these respondents were soil testing regularly and already had a focus on management of nutrients:
 

*"We are already onto it with the help of an agronomist and we're actively doing soil testing regularly."*

## Implications

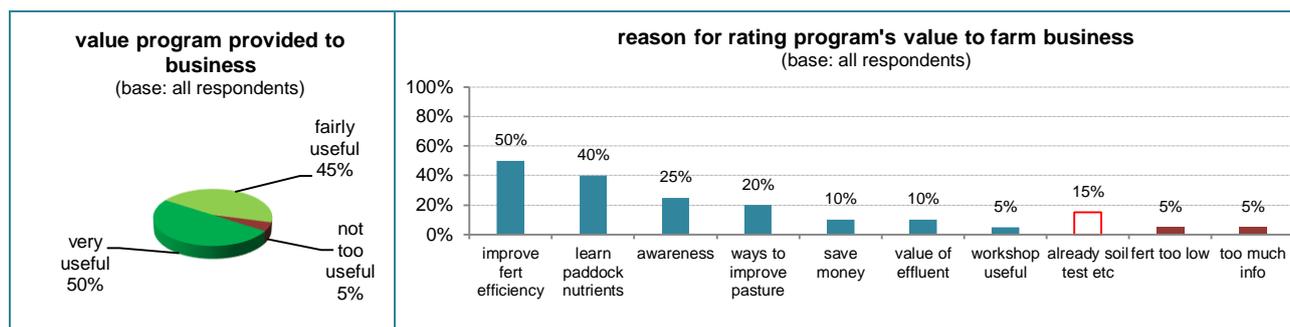
The Fert\$mart program has successfully increased knowledge and understanding of nutrient management practices among dairy farmers lacking insight into nutrient balance and the impact on pasture growth.

## 9. Value of Fert\$mart program to farm businesses

Questions asked:

Q. How would you rate the program in terms of providing added value to your farm business?

Q. Why do you say that?



### Results

- In line with widespread satisfaction with Fert\$mart Plans, all except one respondent found the Fert\$mart program *very* (50% of respondents) or *fairly* (45%) useful in adding value to their farm business. Areas identified as adding value to farm businesses include:
  - Knowledge of where to apply fertiliser, leading to improved efficiency (50% of respondents mentioning):
 

*"The program showed what was needed on different areas on farm, so now we know exactly where the paddocks sit and what is needed and we won't add fertiliser where it's not needed."*
  - Identification of paddock nutrient levels (40% mentioning):
 

*"I think the program is something every farmer should do. Some guys chuck the super on year after year without knowing the nutrients in the paddocks."*
  - Increased awareness and focus on nutrient management (25% mentioning):
 

*"We were already a fair way along with soil testing etcetera, but the program still made us more aware of the importance of soil testing and soil health."*
  - Recommendations of how to improve pastures (20% mentioning)
- The following points were mentioned by people who believed Fert\$mart added less value than it could have:
  - Program offering nothing new to those already soil testing and focused on nutrient management on farm (3 respondents)
  - Program recommendations for fertiliser rates were too low (1 respondent):
 

*"I already use low input fertiliser and they recommended lower levels and I think that might be detrimental to my pasture."*
  - Too much technical information given in too short a time frame (1 respondent)

### Implications

The Fert\$mart program has generally provided value to dairy farmers, ensuring more widespread knowledge of the link between maintaining the right soil nutrient levels and pasture growth.

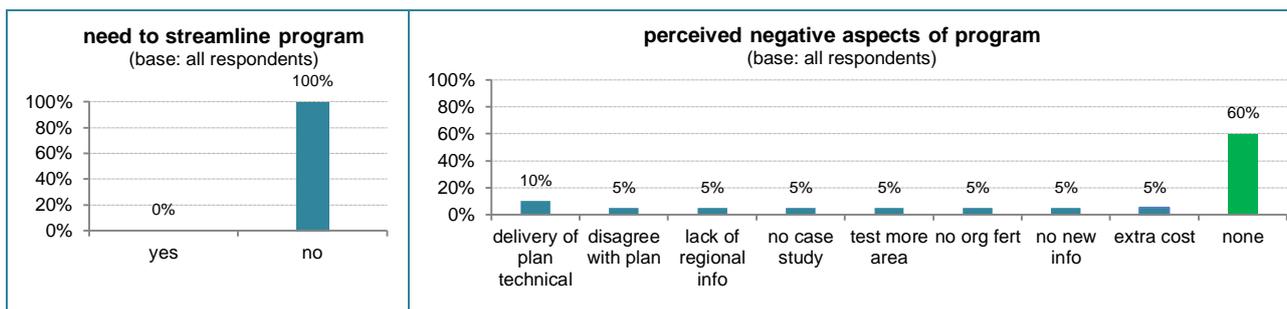
There is some concern regarding recommendations of the level of fertiliser input, with some belief it is too low. If science is available to support the recommendations, then it would be worthwhile to ensure this is made available to Fert\$mart advisers.

## 10. Perceived negative aspects of Fert\$mart

Questions asked:

Q. Do you think there are aspects of Fert\$mart that could be streamlined, or made easier?

Q. What would you nominate as the negative aspects of the program?



\*Caution: very small sample sizes. Data included for interest only.

### Results

- All the dairy farmers interviewed for this evaluation said there was no need to streamline the program or make it easier:

*"The program was easy for us – we sat back and the consultant did all the work. He then came back and ran through the results and he was available to discuss the program if we needed."*

- Eight respondents mentioned negative aspects of the Fert\$mart program however, including the following:
  - Delivery of plan too technical (2 respondents)
  - Disagreed with low input rate of fertiliser (1 respondent)
  - Lack of regional specific information (1 respondent)
  - No case studies included (1 respondent)
  - Not enough paddocks soil tested (1 respondent)
  - Organic or alternative fertilisers not included (1 respondent)
  - Program did not include new information (mentioned by respondent already undertaking nutrient mapping)
  - Consultant went over budget and invoiced farmer for extra time (1 respondent)

### Implications

Evaluation results suggest the Fert\$mart program has generally been well received and its overall format and content will suit the majority of dairy farmers participating in it. To improve the program further, consideration could be given to including scientific evidence of fertiliser recommendations and case studies.

## 11. Suggestions to improve the Fert\$mart program

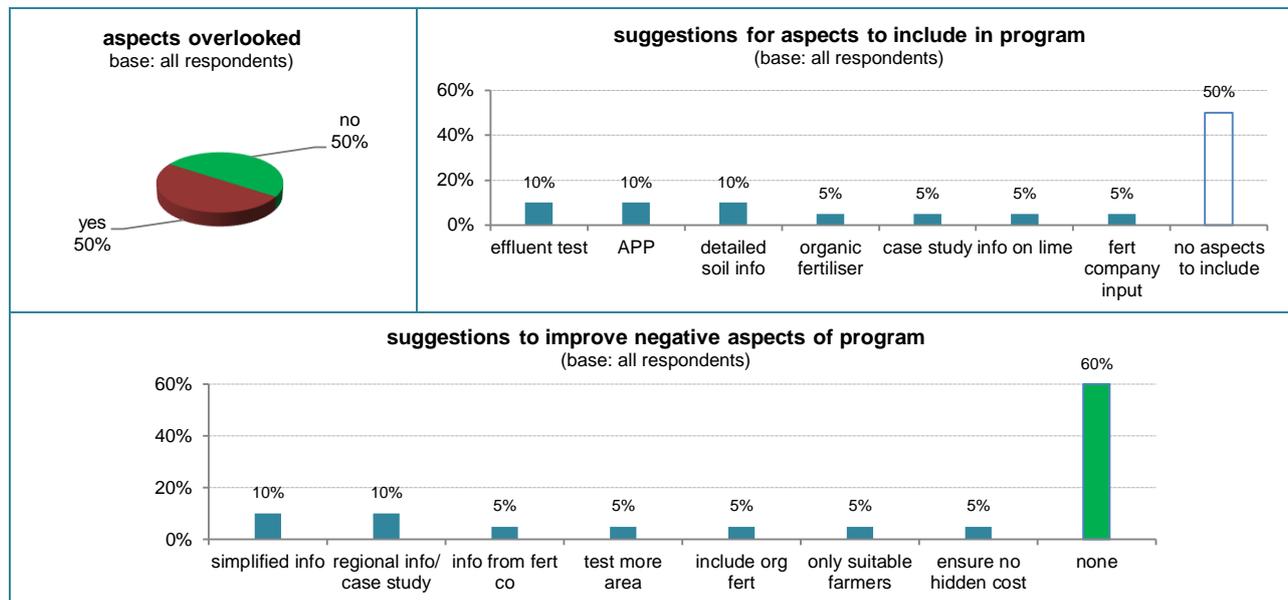
Questions asked:

Q. Has there been any aspects of nutrient management overlooked in Fert\$mart?

Q. If yes: What should be included?

Q. Do you think there are aspects of Fert\$mart that could be streamlined, or made easier?

Q. If negative aspects mentioned: Can you make any suggestions to improve these negative aspects?



\*Caution: very small sample sizes. Data included for interest only.

### Results

- The Fert\$mart program could have included extra features according to 50% of respondents, namely:
  - Inclusion of effluent testing to gain greater understanding of nutrients on an individual farm and improve accuracy of effluent use (2 respondents)
  - More detailed soil information, particularly relating to soil biology (mentioned by 2 respondents who possibly received a Plan before this was incorporated into the Fert\$mart program)
  - A relevant I-phone or I-pad 'App' (2 respondents)
  - Inclusion of regional case studies in Fert\$mart report or workshop (1 respondent)
  - Incorporate view of fertiliser retailers (1 respondent)
- Forty percent (40%) of respondents were able to provide suggestions to improve the program, including:
  - Making presentation and delivery of the Fert\$mart Plan simple and easy to understand (2 respondents)
  - More regional based data for comparison and baseline data regional and case studies (2 respondents)
  - Point of view from a fertiliser company to accompany advisers low fertiliser input recommendations (1 respondent)
  - Include only farmers that will receive the most benefit from the program, rather than those already following similar practices (1 respondent)

### Implications

Some minor changes to the Fert\$mart program may increase its already favourable standing. Effluent testing, the development of a Fert\$mart App as well as some additional local information could be considered if resources permit.

## 12. Recommendation of the Fert\$mart program to other farmers and likelihood of repeating program

Questions asked:

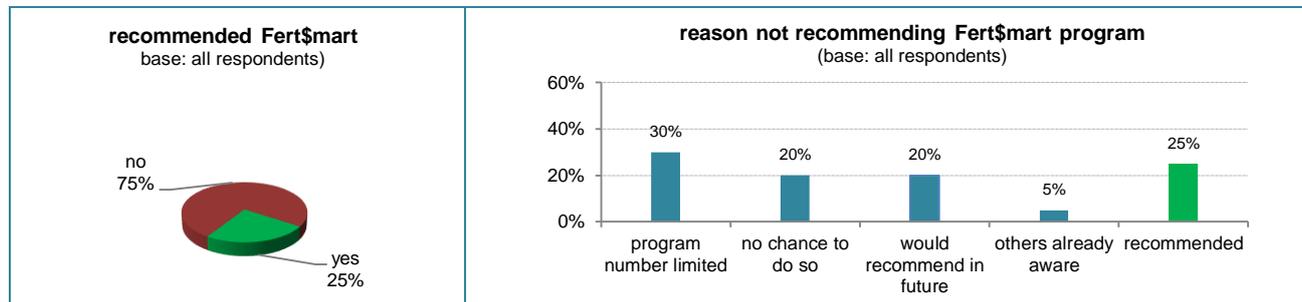
Q. Have you recommended the program to other farmers?

Q. If yes: What has been their reaction? If no: Is there a reason for that?

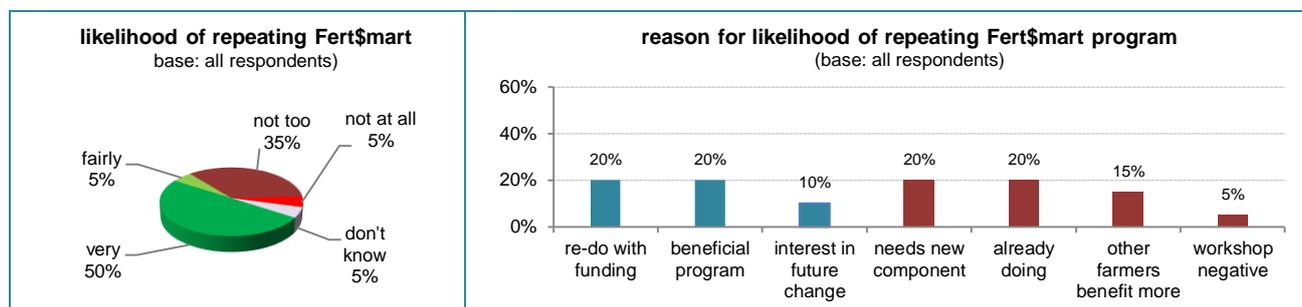
Q. How likely is it that you will repeat the Fert\$mart program next year or the year after?

Q. Why is that?

### Recommendation of the Fert\$mart program to other farmers:



### Likelihood of repeating Fert\$mart program:



\*Caution: very small sample sizes. Data included for interest only.

## Results

- At the time of evaluation interviews, 25% of respondents had already recommended participation in Fert\$mart to other dairy farmers and an additional 20% said they would do so in future.
- Among the 5 respondents who have recommended Fert\$mart participation, 4 received feedback that others would be interested.
- Thirty percent (30%) of respondents said they hadn't recommended Fert\$mart to their peers due to belief the program is not available to everyone and 20% said they had not had an opportunity to do so.
- More than half (55%) of the farmers interviewed would be *very* (50%) or *fairly likely* (5%) to repeat the Fert\$mart program in the next year or 2. Reasons for repeating the program include:
  - Program was beneficial (20% of respondents mentioning)
  - Taking advantage of available funding (20%)
  - Interested in monitoring the result of Fert\$mart recommendations (10%)
- Reasons for being unlikely to participate again within 2 years include the following:
  - Already doing soil tests etc. (20% mentioning)
  - Program would need an advanced or new component to make repeating it worthwhile (20%)
  - Other farmers would benefit from the program more than respondent (15%)
  - Workshop was a negative experience due to communication issues and lack of local case study information provided (1 respondent)

## Implications

Organisers of Fert\$mart must expect a fairly high attrition rate among participants if the program is repeated within 2 years.

## Adviser in-depth interview findings

### 13. Motivation to be involved in the program/perception of training

#### Key findings

- Key drivers to participate in the Fert\$mart program varied among the advisers interviewed, namely:
  - Seeing the benefit to farmers via provision of a formal Fert\$mart plan:  
*"Your dairy guys spend a lot of money on fertilisers and don't normally ask for agronomic advice, this formal plan is how we can help their business."*
  - An opportunity to improve both farmer and adviser knowledge:  
*"Fert\$mart is a platform to get a lot of detailed data, disseminate it and form a better program for farmers involved and improve adviser knowledge regarding type and timing of fertiliser."*
  - Two younger advisers saw the program as an opportunity to gain a competitive advantage over other advisers through having Fert\$mart accreditation
  - A passion for soil health or past work experience similar to the program eg. FertCare:  
*"I had done FertCare training previously so a lot of that carries across to Fert\$mart, it's a great way to get people to use their fertiliser more efficiently and productively and it takes into account their production and the environment so for me it ticked all the boxes."*
- One adviser was not initially interested in program participation due to concerns regarding the level of time commitment required to produce Fert\$mart Plans.

#### Implications

Responses clearly show that industry advisers believe dairy farmers can derive benefits from the Fert\$mart program and consequently this was a key driver for their involvement. Fert\$mart accreditation is also seen as a competitive advantage, providing increased knowledge and an opportunity to expand client bases.

## 14. Adviser perception of training and delivery

### Key findings

- Methods used to train advisers participating in the Fert\$mart program varied among regions, however all advisers interviewed deemed their training sufficient and as a result felt comfortable developing Fert\$mart Plans.
- Throughout the early stages of Fert\$mart involvement and training, advisers typically had sufficient interaction with trainers and Dairy Australia technical specialists and felt they could contact them if help was required.
- Of note however, Fert\$mart accreditation guidelines were considered lengthy by some of the advisers who had to spend considerable time increasing their skills and knowledge to achieve accreditation.
- While recognizing the need for structure and guidelines, several advisers found the initial process of setting up Plan templates and tables for nutrient balances to be time consuming. One adviser would have preferred to receive region specific templates from Dairy Australia, but others suggested it was beneficial for individual advisers to tailor their Plans and templates to their client needs and situations, believing efficiency increases with familiarity of the program
- Presenting the technical information in a format that was easy for dairy farmers to understand proved challenging for one of the advisers interviewed.
- There was also one adviser who found timeframes to deliver the Plan tight and thought it may be better if it was delivered in stages.
- Another felt he could have had more input into the farmers selected for the Fert\$mart program in their region.
- Despite the initial challenges, some adviser respondents suggested Fert\$mart accreditation and the information gained from being involved may be beneficial in the longer term:  
*"Advisers can use the information they get from the program to improve their business. It's a good offering to separate your business from others out there."*
- Encouragingly, some advisers mentioned already winning new clients as a results of being involved in the program.

### Implications

Technical specialists have clearly provided substantial training and support to Fert\$mart advisers, however the program is quite complex with a high level of technical detail and some advisers may need additional information and help to streamline the process and simplify information provided to dairy farmers.

Despite a variety of methods used to train advisers participating in the Fert\$mart program, it is interesting to note the consistency of outcomes (detailed in latter sections of this report).

Although the initial development of Plan templates and meeting accreditation requirements is time consuming and may prove to be a barrier for some advisers, there is widespread acknowledgement of the benefits of the current format.

## 15. Advisers' overall perception of the Fert\$mart program

### Key findings

- Almost all the advisers interviewed were extremely positive towards what Fert\$mart delivers for farmers, with the following aspects mentioned:
  - Provision of a structured plan, with strong reporting of facts and figures:

*"The Plan really makes farmers aware of what they need to do. In the past, a lot of my farmers have 'played it by ear' a bit and their fertiliser program had no structure. By doing this, it has given them an idea of where they are heading and what is needed to improve their pasture performance."*
  - Presentation of data in easy to read maps and charts:

*"I have farmers that had been soil testing for 15 years and said they were getting lost in the results. Being able to see visual trends in fertility mapped or colour coded makes so much more sense and really hits home."*
  - Provision of a platform to monitor and update fertiliser usage in the future:

*"The Plans offer dairy farmers some real facts and figures and gives them an excellent base to work from. They should be able to monitor, update and maintain their whole fertiliser nutrient budget from this point on."*
  - Increases awareness of soil health and benefits associated with soil testing regularly
  - Benefits for both farmer and environment
  - Provides an opportunity to have face to face interaction and discussion with farmers:

*"One of the most beneficial parts of the program is doing the soil sampling with the farmer and then running back through the Plan with them. Sometimes it's those casual face to face conversations that can be the most useful."*
  - Some farmers already seeing the benefit from implementing program recommendations
  - Program format is consistent and repeatable:

*"Although the program is not necessarily a new concept, it condenses things into a format that is consistent and repeatable."*
- Despite the overall positive feedback from advisers, some challenges for the program were also identified, with the following mentioned:
  - A small number of participants only wanted free soil tests and will not implement recommendations
  - The Fert\$mart Plan may be too long and technical for some farmers:

*"The Plan is too extensive for the modern day farmer – they will only pick out 1 or 2 pages such as the fertiliser plan. They don't want to know the ins and outs, they just want a summary."*
  - While for some farmers it is easy to step out of their comfort zone and implement changes, others feel challenged by the recommended changes
  - The nutrient levels recommended in Fert\$mart Plans are open to criticism and anecdotal evidence suggests they are being viewed with skepticism by some industry consultants and fertiliser retailers (mentioned by one adviser)

### Implications

Although the advisers involved in delivering the Fert\$mart program are positive about it and clearly see the benefits it provides to farmers, there may be a small proportion of service providers and retailers circulating negative opinions of the program.

The complex technical information included in Fert\$mart Plans may prove difficult for a segment of dairy farmers to comprehend and a means of simplifying it or assisting farmers to understand may need to be explored.

## 16. Adviser suggestions to improve Fert\$mart program

### Key findings

- Several advisers recommended having an option to produce a more streamlined version of the Fert\$mart program would be beneficial for advisers and farmers, with some advisers already implementing something similar in their consulting business.
- One adviser recommends including economic data to show dairy farmers how much improvement in pasture performance is needed to justify the amount they are currently spending on fertiliser.
- Several advisers believe the inclusion of effluent testing may improve effluent recommendations:  
*"At the moment we do the plans on average effluent nutrient data, but the dataset is too small and there is large amounts of error, so to include an effluent sample would be beneficial."*  
*"It would be interesting to show farmers on their own farm what sort of nutrients they have in their effluent bank that they can use."*
- A Fert\$mart computer program or 'App' would streamline delivery of information for some farmers and advisers:  
*"We have fertiliser programs on I-phones and I-pads, so that is the best way for me to communicate with most of my farmers now."*
- Several advisers suggested increasing the amount of payment on offer to advisers to cover the substantial time commitment required to complete the highly detailed Plans for Fert\$mart accreditation.
- Including plant tissue testing was recommended by one adviser (but others felt this was not necessary).
- One adviser would like the option of sending soil tests to the lab normally used by their company.

### Implications

Due to the variance of technical information desired by farmers, it may be beneficial for both farmers and advisers to have the option of a streamlined version of the Fert\$mart Plan. Provision of detailed Plans may require extra funding in future programs.

If there is scope to be included in the program, development of a Fert\$mart APP will be useful for some advisers and inclusion of effluent testing may improve accuracy of effluent recommendations

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## **Appendix: Questionnaire and topic guide**

## Appendix 1: Dairy farmer questionnaire

- Q1. How did you hear about Fert\$mart and what motivated you to become part of the program?
- Q2. Was your Fert\$mart adviser in retail or private business?
- Q3. Did the Fert\$mart plan for your farm's nutrient management make any recommendations?
- Q4. If yes: What did it recommend?
- Q5. What did you think of these recommendations?
- Q6. Have you implemented any of the recommendations made?
- Q7. If yes: What changes have you made?
- Q8. What has been the outcome of those changes?
- Q9. Did you need any additional information or support to implement the changes?
- Q10. If yes: What information or support was required?
- Q11. Are you likely to continue monitoring nutrient levels on the farm in future?
- Q12. Why is that?
- Q13. Has Fert\$mart changed your approach to monitoring nutrient levels?
- Q14. If yes: In what way?
- Q15. If no changes made as result of recommendations made: Was there a reason why you didn't implement the recommendations made?
- Q16. Is there any additional information or support you require that would help you to implement changes?
- Q17. How would you rate the Fert\$mart plan in terms of usefulness for you?
- Q18. Why do you say that? Which aspect of the report is most useful?
- Q19. Did the Fert\$mart plan provide a sufficient amount of technical information? If no, how could it be improved?
- Q20. Was any aspects of the plan too technical?
- Q21. Prior to participating in the Fert\$mart program how would you have rated your knowledge on a scale of 0 to 10 where 0 = 'no knowledge' and 10 = 'know everything there is to know' about the following ...  
*Interviewer note: you may need to explain the scoring more fully*
1. Fertiliser use efficiency
  2. Impact of soil health on pasture production?
- Q22. Now you have participated in the Fert\$mart program how would you have rated your knowledge on a scale of 0 to 10 where 0 = 'no knowledge' and 10 = 'know everything there is to know' about the following ... *Interviewer note: you may need to explain the scoring more fully*
1. Fertiliser use efficiency
  2. Impact of soil health on pasture production?
- Q23. Has participating in the Fert\$mart program changed your thinking about nutrient management in any way at all?
- Q24. If yes: in what way? If no: Why is that?
- Q25. What would you nominate as positive aspects of the Fert\$mart program? And what would you nominate as negative aspects?
- Q26. If negative aspects mentioned: Can you make any suggestions to improve these negative aspects?
- Q27. Has there been any important aspects of nutrient management overlooked in Fert\$mart?
- Q28. If yes: What should be included?
- Q29. Do you think there are aspects of Fert\$mart that could be streamlined, or made easier?
- Q30. If yes, what are they?
- Q31. If negative aspects mentioned: Can you make any suggestions to improve these negative aspects?
- Q32. Overall how would you rate the program in terms of providing added value to your farm business?
- Q33. Why do you say that?
- Q34. Have you recommended the program to other farmers?
- Q35. If yes: What has their reaction been?
- Q36. If no: Is there a reason for that?
- Q37. Fert\$mart is not designed as a once off program, it's meant to be repeated. How likely is it that you will repeat the Fert\$mart program next year or the year after?
- Q38. If not, why?

Q39. Are there any further comments you would like to add to inform the evaluation of the Fert\$mart program?

Demographics:

Q40. May I please ask your age?

Q41. Gender (record)

Q42. How would you describe the phase your dairy enterprise is currently in?

Q43. How many cows were in your milking herd at the peak of last season?

Q44. How many hectares do you use for your milking herd – that is grazing land, not including your support blocks?

## Appendix 2: Adviser topic guideline

### Demographics

*Are you a private or retail based adviser?*

*How many Fert\$mart plans have you conducted?*

*In which regions have the plans been conducted?*

### Motivator to become involved in Fert\$mart:

Explore how adviser came to be involved in Fert\$mart, eg:

*How did you hear about Fert\$mart and what motivated you to become part of the program?*

### Perception of initial involvement:

Explore perceptions of adviser training:

*What did your Fert\$mart training involve?*

*In your opinion, did your training prepare you well enough to deliver the program?*

*If no: What else did you need from your initial training or what did you need it to cover that it didn't?*

*What were the most useful aspects of your Fert\$mart training?*

*Was there anything that could have been improved?*

*If yes: What?*

### Perception of Fert\$mart program:

Explore whether advisers see real value in the program and what that is:

*Overall, how would you describe the Fert\$mart program to date?*

*What do you think are the program's strengths?*

*Does it have any weaknesses, or areas it could be improved? Has there been anything overlooked?*

*If yes: What are they?*

*How well have dairy farmers responded to participation in the program?*

*Are there any aspects that have been particularly well received by dairy farmers?*

*If yes: Which aspects?*

*Are there any aspects that have not been so well received by dairy farmers?*

*If yes: Which aspects? Do you have any suggestions for improvement?*

### Delivering Fert\$mart:

Explore how well delivery has gone:

*Have you experienced any difficulties at all with delivering the program?*

*If yes: What difficulties have you experienced?*

*How well supported do you feel in delivering the Fert\$mart program?*

*If not well: What sort of support did you need?*

*If well: What sort of support have you received?*

### Future use of Fert\$mart

Is there any aspect of the program that could have been better or is there anything you can recommend to improve the roll out of the program in the future?

Where sufficient time has elapsed:

*Have you revisited the Fert\$mart plan with any clients?*

### Additional comments:

*Is there anything further you would like to add to inform the evaluation of the Fert\$mart program?*