Dairy Pre-Farm Gate PGP Quarter 1, 2011/12
(July - September 2011)

Executive Summary

The two major themes of the pre-farm component of the Dairy PGP programme are progressing well. Through the dairy pre-farm gate PGP programme, significant of momentum has been created across different players in the sector. The impact of this should not be underestimated as this level of coordination has been difficult to achieve. Currently fertiliser, dairy company, university and a large number of other industry support personnel are aligning their thinking and effort in ways that did not exist 1-2 years ago to address the issues faced by farmers and the industry.

1. Theme 1 – On Farm Innovation and Research

This theme is has made significant progress since its inception. The aim of the theme is to increase the productive potential, resource use efficiency and product value behind the farm gate.

Improved Pasture Performance – Pasture Persistency: It is clear that New Zealand dairying will continue to be based on grazed pastures. Consequently progress in pasture quality and persistence through pasture plant breeding and associated endophytes is vital to maintain dairying's profitability and competitive position internationally. Pasture renewal, to incorporate advantageous plant breeds, is a vital step required to improve national productivity. Farmer confidence in pasture renewal however is low due to persistency issues. Improving pasture persistency under different conditions is a key issue to be addressed going forward.

A persistence survey in autumn/early winter 2011 looked at plant phenotypes, sampled plants for analysis and successfully established plants at Ruakura, AgResearch for a controlled longitudinal study. Genotyping and phenotyping of the plant samples has shown there are clear differences in the frequency of certain alleles that will allow individuals within the populations, and within the different treatment combinations, to be differentiated. These should provide clear genetic markers for the studies being undertaken to improve pasture persistency.

Precision Agriculture has yielded a protocol for evaluating heat detection devices: Dairy farmers face many challenges to remain competitive (e.g. availability of skilled labour, balancing the dual requirement to increase productivity yet reduce their environmental footprint). A new generation of information and automation technologies have the potential to provide solutions to address some of these issues. Future dairy farms must be adaptable to take advantage of the opportunities provided by these technologies. This research aims to build knowledge and expertise that will underpin the development and adoption of advanced tools necessary to optimise farm production, mitigate labour constraints, improve animal welfare and broaden lifestyle choices. Broadly, the project focuses on the use of automation technology to reduce manual labour and information technology to improve decision making.

Data from a study which evaluated the performance of two activity meters for detecting cows in heat was undertaken on a large pasture-grazed dairy farm (Lincoln University Dairy Farm). Results have been analysed and show that neither of the devices was able to meet

the industry target of 95% heat detection efficiency (using a 72 hour time-window for activity alerts, sensitivity was 78% and success rate 79%). A significant outcome of the study was the development of a protocol for evaluating heat detection devices using time-window analysis.

2. Theme 2 – Building Capability for a Sustainable Future

This theme is progressing well and aims to improve on-farm decisions through building industry capability and knowledge, up-skilling rural professionals, development of support networks and attracting more people into the industry.

Development of benchmarks for a Nutrient management auditing and monitoring systems are underway: The dairy industry is facing increasing constraints as a result of the development and implementation of water quality and quantity limits at regional and catchment scales. These constraints include restrictions on nutrient loss from existing farms, which will drive increased farmer demand for independent and quality-assured advice on nutrient management planning. This programme is developing the training and quality assurance systems and support structures that will enable this demand to be met.

Defining benchmarks for nutrient use efficiency with stakeholder consensus is key for developing an audit and monitoring system. Regional/sub-regional benchmarks have now been developed and detailed nutrient management information is now being collected from at least 150 farms in Hurunui, Mangatainoka and Upper Waikato catchments to pilot this audit and monitoring systems. This initial process will road-test the system with engaged farmers (i.e. farmers in sensitive catchments) and estimate the costs for a potential nationwide roll-out in 2012/13.

Codes of practice and training in Effluent Management: To improve effluent management capability across the industry among farmers, consultants and equipment suppliers, a Farm Dairy Effluent Design Code of Practice and Standards has been developed. It is supported by two documents: "How will the code affect me?" and "Farm dairy effluent systems - making the best decision for your farm". A new short course at Massey University on Farm Dairy Effluent System Design and Management has begun with significant and fast uptake. A quarterly effluent industry e-newsletter "Spreading the Word" has been released and now reaches over 350 rural professionals.

SMASH is using a multi-channel approach to support farmers. The Smaller Milking and Supply Herds Trust (SMASH) has multiple aims for farmers that have herd of less than 350 cows:

- To inspire, motivate and educate farmers so they farm effectively and efficiently given their resources;
- To provide farmers with the opportunity to explore options and innovations that will improve their farm business and help them realise their goals; and
- To provide increase the acknowledgement, appreciation and support of smaller herd farmers who contribute to local communities and national prosperity.

In the first year of the programme, SMASH has delivered on-farm field days and three mini-conferences with 310 members in Waikato, Northland and Taranaki, established a Special

Interest Group to develop and deliver information in specific area of interest to SMASH farmers; launched a website and a FaceBook page.