



Dairy Pre-farm Gate PGP Quarter 1, 2012/13 (July - September 2012)

Executive Summary

Overall, Themes 1 and 2 are progressing well. This report captures significant developments achieved this quarter.

1. Theme 1 – On Farm Innovation and Research

Steady progress continues to be made.

Improved Pasture Performance trials are underway: The core objective of this project is to analyse and understand persistence of perennial ryegrass-based dairy pastures and then use this knowledge to benefit farmers. Avenues to deliver the benefits include the Forage Value Index, rural professional advice and use by plant breeding companies. 'Persistence' is the outcome of changes in population density of sown plants, plus changes (if any) in the expression of traits in survivor populations relative to traits of the original seed line, that influence the yield of pasture over time. To fully analyse and understand 'persistence', information is required at individual (the phenotype and genotype of plants within the population), population (the density of plants and tillers of perennial ryegrass) and pasture community (the presence and abundance of different species) level.

This is a long-term project that uses 'looking back' and 'looking forward' approaches to this analysis. The 'looking back' approach began with a survey of pastures and perennial ryegrass populations in a total of 72 paddocks on commercial dairy farms, carried out in autumn 2011. These paddocks varied by region, ryegrass functional type and age. Analysis of individuals within the surviving ryegrass populations is underway using phenotyping and genotyping tools. The 'looking forward' approach was implemented via the establishment in autumn 2011 of three field experiments in pastures grazed by dairy cows at Jordan Valley in Northland, Newstead in the Waikato and Lincoln in Canterbury. These experiments are comparing four functional types of perennial ryegrass sown at five different seeding rates (to create differences in pasture density and plant competition), across three environments. Changes in pasture yield and composition, insect pest species abundance and damage levels, and perennial ryegrass population density, genotypic composition and phenotype, will be monitored over five full years.

Refining the Precision Agriculture project ensures farmer focus: Working with farmers, researchers, technical experts and industry good organisations, DairyNZ and Dairy Australia have redeveloped a Strategy for Precision Dairy farming. Two major new opportunities have been identified:

- Knowledge on how good farmers make better decisions, which gives the potential to find ways to support farmers to manage their farming systems more effectively than they could do intuitively; and
- Ways to enable farmers to advance more quickly through facilitation and implementation of agile farming systems (those with an ability to adapt and build capability faster).



Delivery of the Strategy requires industry-good co-ordination and leadership; working to define the on- and off-farm value precision technologies; improving the technology available to farmers; integration of precision technologies within farming systems for improved management; and developing learning and training initiatives for farmers and service providers. Action in these focus areas will enable future dairy farmers to implement the Precision Dairy approach with enhanced confidence and effectiveness.

2. Theme 2 – Building Capability for a Sustainable Future

The theme continues to make good progress, providing the following highlights.

Nutrient management audit data valuable: The Audited Nutrient Management System (ANMS) is being set up to monitor and evaluate progress in nutrient management and it is providing the dairy industry with valuable benchmarking information in three regions where nutrient limit setting processes are underway (i.e. Canterbury, Manawatu and Waikato).

Farm data for the 2011/12 season have been collected and analysed to validate and refine the ANMS protocols developed last year. Overseer version 6 is being used for the 2011/12 season, whereas version 5 was used for the 2010/11 season data. The up-to-date information from the pilot is being used to inform industry submissions on the Hurunui-Waiapu Zone Plan, to aid with development of an implementation plan for Horizons One Plan and to improve benchmarks for farmers involved in a large-scale industry catchment project (Upper Waikato Sustainable Milk). Having this data available improves the quality of advice to farmers, policy makers and scientists.

Animal welfare training implemented by AgITO: Animal husbandry incorporates a wide range of animal management and health aspects on farm, and farmers increase their skills and knowledge about animal husbandry by learning from a variety of sources. Sources targeted for improvement by the Animal Welfare Management programme include advice provided by rural professionals, formal training provided by organisations such as the AgITO and more informal training such as workshops, fielddays and discussion groups.

This quarter has culminated in the successful delivery of DairyNZ developed training material on calving management that has been incorporated into the Primary ITO Level 3 Breeding Course. Primary ITO has delivered this course to over 600 trainees in around 40 training sessions throughout New Zealand. This achievement is the first use of an external training provider and demonstrates that this training avenue is a viable option for the delivery of training on a range of animal welfare related topics in the future.

Large Farm Business projects are delivering insight to Māori dairying businesses: Engagement with the Trustees of Maori dairy farming businesses through the provision of Whole Farm Assessments and workshops aims to provide Trustees with knowledge that will empower their governance and management of the farm business. Four businesses received this analysis of their farm operations and obtained value from this independent assessment and benchmarking.