

Livestock Systems Department

Title

Investigation of factors influencing bacterial transfer into milk

Abstract

The research project represents a cross-programme collaboration involving Animal and Grassland Research and Innovation Centre (AGRIC) at Moorepark and the Teagasc Food Research Centre (TFRC). It will be headed by David Gleeson (AGRIC) with significant contributions from Bernadette O'Brien (AGRIC), and Kieran Jordan (TFRC). A Walsh Fellowship post (Walsh Fellowship Reference 2011040) to complete this work as been approved with Professor Pamela Ruegg, Dept. of Dairy Science, Madison, USA to act as academic supervisor. The successful candidate will be registered with the department of Dairy

Science, University of Wisconsin-Madison, Wisconsin, USA. Professor Ruegg is recognized as a world leader in the field of Food Microbiology and her contributions will increase the knowledge base to undertake this work programme. Professor Ruegg is presently supervising a research project in the US evaluating the relationship between farm and environmental factors and bacterial numbers in milk. The experience gained from this study in terms of methodology and statistical analysis of the data will be of great benefit to this project proposal. The Walsh Fellowship student will attend two semesters (2 x 4 months) at Madison University where she will attend lectures and practicals in microbiology. The laboratory techniques gained during her terms at Madison will add to the knowledge base presently at Moorepark. This project will have significant industry involvement in particular with Dairygold and Tipperary Co-operatives, both suppliers to Danone. Both processors have indicated their commitment to this research proposal and this collaboration may also lead to funding opportunities for Teagasc.

The project will apply a very intensive approach (regular visits to a smaller number of herds) to monitoring specific microbial communities in milk, using culture based methods, and will investigate factors on-farm influencing bacterial transfer into milk. The effect of storage time of milk and temperature of storage on-farm on bacterial counts in milk will be investigated and this information will be relevant to both milk processor and producer.

New milking machine cleaning procedures will be developed that will assist Irish dairy farmers in achieving the higher milk quality standards required whilst reducing the quantity of water and phosphate discharge at farm level. In addition, the chemical content of products used for cleaning milking equipment on the Irish market will be monitored through chemical analysis and field trials and this work will assist farmers in choosing products and manufacturers with the reformulation of existing products to improve the quality of product available to farmers. All information from this study will be made available to farmers, advisory personnel and processors.

This project has considerable opportunity to rapidly impact on dairy farm practices.

The information from this study will have a very positive impact on milk quality in Ireland.

Project Leader: David Gleeson

Programme/Subprogramme/RMIS Number:

AGRIP – Moorepark-Livestock Systems – Precision Farming System-6237

Start Date: 01/01/12 **End Date:** 31/12/15