Animal Bioscience Department

Title

Improvement of the national dairy cow breeding programme to achievable sustainable genetic gain

Abstract

Over 70% of Irish dairy farmers use the Economic Breeding Index (EBI) to identify suitable bulls to generate replacements. However, the choice of AI bulls available to dairy farmers is dictated by the (inter)national breeding companies operating in Ireland. Recruitment of bulls to AI, and therefore to the national breeding programme is primarily based on EBI alone, with little consideration for the long term deleterious impact of lack of genetic diversity on the national herd; moreover, available bulls are dominated by Holstein-Friesian genetics. Lack of co-ordination between breeding companies in bull recruitment results in over-representation of family lines nationally, limiting choice for dairy farmers seeking to avoid inbreeding in their herd.

The aim of this project is to provide a strategic long-term approach to generate bulls for the national breeding programme. The identification of genetically elite and diverse germplasm from alternative family lines and breeds will be emphasised to achieve sustainable genetic gain. The optimal use of DNA-based technologies, alternative selection strategies and the use of modern reproductive technologies to augment genetic gain will be investigated. This project will produce science-based pipelines and algorithms for the generation of genetically elite and diverse bulls for use in the national breeding programme.

Project Leader: Sinead McParland

Programme/Subprogramme/RMIS Number:

AGRIP - Moorepark Animal Biosciences-Genetic Improvement of Animals_6668

Start Date: 01/01/15   **End Date:** 31/12/18