Animal and Bioscience Department

Title : Development of a new Index to improve female voluntary culling/retention decisions on Irish dairy farms

Abstract:
While the EBI is the index of choice to identify superior dairy sires in Ireland, there is increasing awareness that it may not reflect maximum phenotypic profit potential of dairy females. Apart from additive genetic merit, a number of critical factors (genetic and environmental) impact upon the profit generated per lactation by individual cows. Non-additive genetic effects include heterosis and recombination. Important environmental effects include age at calving, calving date, previous lactation performance etc. Non-additive genetic effects are particularly important where mixed breed cows are concerned. It is anticipated that the number of crossbred cows entering Irish dairy herds will increase substantially in the coming years. There is a need to simulate the consequence of future breeding strategies (whether crossbreeding or straight-breeding) with regard to breed fraction, animal performance characteristics and herd profit. There is also an increasing requirement to provide an index that will better reflect the impact all of these effects vis a vis phenotypic profit potential in the current/subsequent lactation. This study will provide farmers with a means to identify underperforming cows in the herd as candidates for culling. This research will contribute to the ultimate development of an on-line decision support tool for farmers. The project will be a collaborative one involving scientists from Teagasc Moorepark (Dr. Frank Buckley, Dr. Laurence Shalloo and Dr. Donagh Berry), University College Dublin (Dr. Karina Pierce), the Irish Cattle Breeding Federation (Dr. Ross Evans, Dr. Andrew Cromie, Dr. Francis Kearney), AbacusBio (New Zealand - Dr. Peter Amer and Tim Byrne) and Massey University (Dr. Nicholas Lopez-Villalobos). The WF student will be required to spend some time (at least 1 year) in New Zealand during the course of this PhD.

Project Leader : Frank Buckley

Programme/Subprogramme/RMIS Number:
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