

**Animal Research Programme –
Sustainable Production Systems and System Analysis
RMIS No: 6263**

Title

Carbery Greener Dairy Farms

Abstract

Dairy production in Ireland represents one end of the spectrum of dairy systems in Europe. In Ireland dairy production is typically based on permanent grassland and grazed grass makes up 60 to 70% of the diet of dairy cows, grass silage another 20 to 25% and concentrate feeds 10 to 15%. Hence, home-grown grassland products (grazed grass or grass-silage) make up 85 to 90% of the diet. Cows remain outdoors grazing for up to 10 months of the year and much of the excreta are recycled directly back to the grassland by the grazing cows. There is a very close integration between the animal and crop components of the system. This system is relatively efficient in terms of energy use and milk produced in Ireland has one of the lowest greenhouse gas (GHG) emissions per litre in Europe (Leip et al., 2010). Ammonia emissions are also low; emissions per cow grazing outdoors are approximately half of that per cow indoors. Carbon accumulation is also favoured under permanent grassland and in Ireland less than 5% of grassland is renovated each year. On the other hand, the localised deposition of urine by grazing cows results in relatively inefficient recycling of N and can increase risks of harmful losses of N to water and to the atmosphere. Carbery Group want to measure and improve the sustainability of the farms that supply their milk. Measurements will be conducted on 14 dairy farms and will include Life Cycle Assessment to determine GHG emissions and Carbon Footprint, Nutrient use efficiency, Energy use efficiency, Water use efficiency, Biocide use, Impact on biodiversity and Economic sustainability. Lessons learned will be disseminated to all Carbery milk suppliers in a Sustainability Improvement Programme.

Project Leader: James Humphreys
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