



PhD Scholarship in Life Cycle Assessment of Organic Dairy Systems

School of Biosystems & Food Engineering

<http://www.ucd.ie/biosystems/>

Evaluation of the production processes of Glenisk based on organic milk versus other standard production processes

The dairy industry is a key sector for the Irish economy exporting approximately 90% of its production for a total value of €4.5 billion. Nearly 8 billion litres were produced in 2019, a significant increase on the 5.4 billion litres produced in 2011. The increase in milk production and herd size has resulted in an increase in the environmental impact of the dairy industry.

Based in University College Dublin under the supervision of Dr. Fionnuala Murphy and Dr. Sharon O'Rourke, this PhD research project uses life cycle assessment (LCA) methodology to assess the environmental impacts of the Glenisk organic plus farming approach. Organic farming plus is defined as organic and 100% grass-fed and in this study and results in a better omega 3:6 profile. This will be compared to other organic and conventional farming where cattle are finished on imported organic concentrates. The LCA will consider the impact on climate through the Global Warming potential and also considers other impacts such as Terrestrial Acidification Potential (AP) and Freshwater Eutrophication Potential (EP) which are significant in the dairy industry due the large amounts of imported nitrogen and phosphorus related to the dairy industry.

Soil carbon sequestration is a carbon mitigation strategy aimed at lowering the overall greenhouse balance on farms. Amendment of the fertiliser regime in organic practice increases the rate of organic matter recycling via increased fresh carbon input in animal manures and crop residues, compared to conventional agriculture. Sustainable soil management presents an opportunity for coupling of carbon and nitrogen cycles for environmentally sustainable intensification of grasslands. This project will measure soil carbon stock in farms under organic plus and conventional farms, to provide data input for LCA analysis. An evaluation of the long-term mitigation potential of organic farming practice compared to conventional farming will be made by simulation of soil carbon stock into the future.

The candidate will be based in the SFI BiOrbic Bioeconomy Research Centre in UCD and will work closely with Glenisk (<https://glenisk.com/>) throughout the PhD. Data collection and soil sampling at organic farms is an important part of the PhD.

About Glenisk

Glenisk is Ireland's best loved yogurt brand. Established in 1987, the family business from just outside Tullamore, Co Offaly is best known for its pioneering approach to organic agriculture, working with 50 small family farms across Ireland.

Glenisk has been especially successful at introducing innovative products that meet emerging consumer needs. Award winning first-to-market launches include alternative dairy options in goats' milk; high protein, authentically strained yogurt; no-added sugar kids and baby yogurts and fromage frais; and on-the-go solutions combining granola and yogurt to deliver 20g of protein.

The only brand in the category offering certified carbon-neutral packaging, Glenisk has successfully eliminated all single-use plastic pots and lids from its ranges.

Glenisk has been focused on sustainability for decades; as well as utilising renewable energy including wind and solar at its manufacturing site, Glenisk has also embraced electric vehicles in its fleet. The business recently partnered with Self Help Africa to plant more than 2,000,000 native trees in Africa and Ireland. Despite the business's global outlook, (with yogurt sold as far away as Hong Kong and Singapore) Glenisk is yet strongly rooted in the community. The brand supports GAA for all codes, ages and sexes as official sponsor of Offaly GAA, LGFA and Camogie, with naming rights to Glenisk O'Connor Park in Tullamore.

Glenisk is a member of Origin Green and a BRC AA accredited manufacturing site.

Relevant disciplines; To fulfil this role the candidate must have obtained a relevant Master level degree (or a minimum 2.1 Honours Bachelors level degree) in a discipline with a strong focus on; Agricultural Science, Environmental Science, Soil Science, Dairy Science, Life Cycle Assessment.

Closing date: 7th August 2023

Expected start date: September 2023

Tax-free Stipend: €18,500 per annum (+ fees)

Position duration: Four years

To apply please follow the instruction in the following link <https://forms.gle/AR62zsRYABagtQV89>. Applicants must include their CV, detailed academic transcripts in the form of certified copies of all undergraduate and postgraduate level certificates, a motivation letter and a reference letter from previous professors or mentors. Candidates must have excellent proficiency in written and spoken English (CEFR Level C1) and provide evidence that they fulfil the specific UCD language criteria. Please note, as travel is required to organic dairy farms, a full clean drivers licence is essential.

Informal requests for further details can be made to Dr Fionnuala Murphy (fionnuala.murphy@ucd.ie).