The Bioprocess Innovation Suite at Teagasc Moorepark

Update March 2022

Welcome from Dr. Olivia McAuliffe, project lead for the Bioprocess Innovation Suite

Welcome to our monthly update newsletter on the development of the Bioprocess Innovation Suite at Teagasc Moorepark. The development of this new facility will increase Teagasc's research capability in the fermentation and biotransformation space. The Suite, funded by the SFI Research Infrastructure Programme and Teagasc is expected to be operational by the end of Summer 2022. The Bioprocess Innovation Suite will be located in the old cheese microbiology lab in Teagasc Moorepark. As of March '22, the lab conversion is well underway and most of the construction work is complete. In the coming months, we look forward to the delivery and installation of the new equipment.

Staff Profile: Dr Olivia McAuliffe

Dr Olivia McAuliffe is Principal Research Officer at Teagasc Moorepark. She is a graduate of University College Cork where she obtained her BSc in 1995 and PhD in 1999.

At Teagasc, Olivia leads a research program on cultures, fermentation, and biotransformation. Her main research areas include the application of state-of-the-art advances in high-throughput genomic and other technologies to food-related bacterial cultures and the bacteriophages that infect them. Her group has developed valuable capabilities in strain discovery and selection for use in food fermentations.

Equipment: BioLector XT with RoboLector

- The **BioLector® XT** is an advanced microbioreactor system based on a standard microtiter plate format and operates with non-invasive, optical sensors.
- The 48 well microtiter plate (0.8-2ml) features online measurements of biomass, fluorescence, pH and DO and simultaneously controls the pH and feeding rates.
- The **RoboLector ® XL** integrates the high-throughput fermentation and online monitoring capability of the **BioLector® XT** with the precise liquid handling of a robotic system.
- Online fermentation monitoring for each individual well facilitates timely addition of inducers, feed solutions and pH value adjustment to maintain favourable fermentation conditions.
- The combination of **Biolector XT** and **Robolector XL** can be used to accelerate microbial screening and rapid scaled-down process optimisation.

Website

https://www.teagasc.ie/food/research-and-innovation/research-areas/food-bioscience/bioprocess-innovation-suite/. For more information, contact Dr Olivia McAuliffe, olivia.mcauliffe@teagasc.ie.