



Assuring Food Safety & Maximising Shelf-life

Teagasc Food Research Centre,
Ashtown

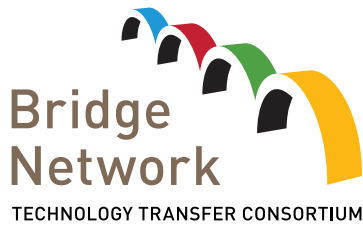
14th June 2019

Welcome to Food Innovation Gateways: **Assuring Food Safety & Maximising Shelf-life**

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Stand
1

Bridge Network (Teagasc, UCC, CIT, IT Tralee)

Presenter: Sean Mulvany

Bridge Network is a technology transfer consortium that comprises the technology transfer offices from Teagasc, University College Cork, Cork Institute of Technology and the Institute of Technology Tralee.

This collaboration is a key driver in the development of Ireland's knowledge transfer system, supporting innovators and entrepreneurs and ultimately creating jobs for the economy. Established in 2017, we are Ireland's largest technology transfer consortium. We are funded by Enterprise Ireland through the TTSl3 programme managed by Knowledge Transfer Ireland.



Stand
2

Tastier Meat, Healthier Meat, Happier Consumer

Presenters: Anne Maria Mullen, Carlos Álvarez, Ruth Hamill and Karthikeyan Palanisamy

Fresh and processed meats are facing new challenges in terms of clean labelling and shelf-life extension while retaining high standards in terms of eating quality. Our research is focused on improving product palatability, nutrition and market-value. Examples of the approach used include the impact of emerging technologies on meat quality and shelf-life; natural ingredients to replace phosphates and salt; and smart dry-aging to extend meat shelf-life while improving aroma and flavour.



Stand
3

Sensory Food Network Ireland

Presenters: Eimear O'Keeffe, Carol Griffin, Eimear Gallagher, Cristina Botinestean, Chris Ovenden and Sinead McCarthy

Sensory Food Network Ireland is a national network of excellence in sensory science. The network is coordinated by Teagasc and functions to integrate sensory science activities on the island of Ireland, and offer a scientifically sound approach to the sensory evaluation of foods for the food industry. At Ashtown, our bespoke sensory facilities comprise 18 individual computerised testing booths, adjustable lighting, controlled ventilation and Compusense® Cloud data collection software. Sensory shelf-life testing is an essential tool for a food manufacturer, where results can influence the process of New Product Development (NPD), yield information about product optimisation and assist in meeting consumer expectations.

Stand
4

Shelf-life Extension Technologies

Presenters: Declan Bolton and Kieran Jordan

Maximising shelf-life, while satisfying consumer demand for minimally processed fresh foods, is an important component of the Teagasc Food Research Programme. To help Irish food companies optimise quality, reduce waste and gain new market opportunities, a Microbial Safety and Shelf-life Suite has been established at Teagasc, Ashtown, including state-of-the-art equipment. This dedicated biocontainment suite will facilitate the development and validation of new innovative approaches to control microorganisms in prepared consumer food (PCF) products and to assure microbial food safety.

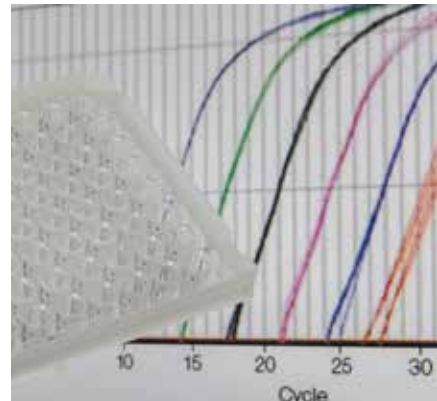


Stand
5

Detection of Fresh Meat Blown Pack Spoilage

Presenters: Joan Carroll and Declan Bolton

Teagasc offer a testing service for *Clostridium estertheticum* and *Clostridium gasigenes* in beef products, backed up by advice on preventative interventions along the beef chain. This specialist expertise allows the industry to minimise the risks associated with blown pack spoilage of vacuum packed beef primals and steaks.



Stand
6

Pathogen Detection and Tracking in the Food Chain

Presenters: Kaye Burgess and Kieran Jordan

Specific and sensitive methods are required to detect foodborne pathogens. Teagasc has significant expertise in implementing methodologies for the detection of bacterial pathogens including Shiga toxin producing *E. coli*, *Salmonella*, *Listeria monocytogenes* and *Campylobacter*. In addition, we are actively engaged in research assessing alternative detection methods, based on sensor-based technologies, flow cytometry, viability PCR based assays and whole genome sequencing of isolates.





Stand 7

Safety and Shelf-Life of Horticulture Produce

Presenter: Kaye Burgess

Key considerations for producers of edible horticultural crops are that their products often have a short shelf-life and are frequently consumed without heat treatment. Teagasc works with the horticulture industry to develop approaches to minimise contamination during production and also to investigate physical, chemical and biological control options to reduce the microbial load during processing, thereby enhancing safety assurance and extending the shelf-life of these products.

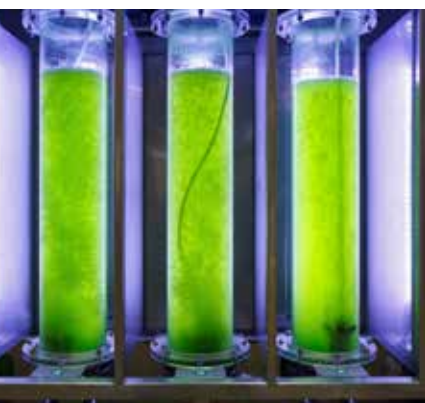


Stand 8

Antimicrobial Peptides

Presenter: Paula O'Connor

The Antimicrobial Discovery Unit at Teagasc Food Research Centre, Moorepark, is a purpose built facility equipped to purify, identify and characterise novel natural antimicrobials and food preservatives produced by micro-organisms, protein hydrolysis or fermentation. This facility can be accessed by research institutes, SME's, national and multinational companies with an interest in the area the Unit has generated a number of antimicrobials, preservatives and strains that are available for licensing.



Stand 9

Clean and Green Extraction Technologies

Presenters: Saravana P. Sivagnanam, Viruja Ummat and Laura Gomez

The Advanced Food Technologies Group at Teagasc Food Research Centre, Ashtown, has a range of novel technologies for extraction of high value ingredients including proteins, lipids and other biomolecules from a range of sources. Novel extraction technologies include ultrasonics, microwave technology, hydrodynamic, supercritical and subcritical fluid extraction technologies. They offer significant advantages over conventional technologies in improving extraction yields and functionality without the use of harmful chemicals. This capability can be accessed by research institutes, SMEs, national and multinational companies with an interest in employing clean and green extraction technologies for value addition to food processing streams. Teagasc researchers can assist in process optimisation and scale-up design.

Stand
10

Novel Decontamination Technologies

Presenters: Apurva Patange and Laura J Hinds

Traditional decontamination treatments used in food processing industries frequently use chemical biocides, which have health and environmental implications. Novel technologies, including light-based technologies, plasma technologies and cavitation technologies, offer a novel form of microbial inactivation against a wide range of microorganisms, including more persistent microbial biofilms and spores. This state-of-the-art novel technologies platform strengthens the research and development capabilities of the Irish food industry. Teagasc researchers can provide specialist know-how, facilities and services in novel decontamination technologies for foods and ingredients.

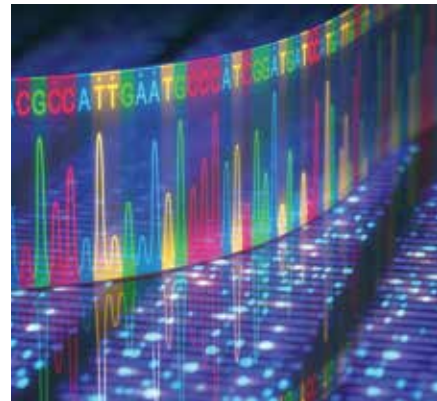


Stand
11

High Throughput Sequencing

Presenter: Fiona Crispie

The Teagasc Next Generation Sequencing and Bioinformatics Facility comprises of several cutting-edge DNA sequencers based at Teagasc Food Research Centre, Moorepark. It can be used to analyse complex microbial communities in foods and other environments, to mine the gut microbiota for probiotics, and to investigate the interplay between diet (including probiotic/prebiotic supplementation) and the microbiota and health. It can also be employed for de novo whole genome sequencing, e.g. to demonstrate the absence of virulence genes in a novel food culture and for identifying food contaminants and their entry point into the food chain.



Stand
12

Chemical Residues: Novel Methods to Assure Food Safety for Export Markets

Presenters: Mary Moloney, Padraig McLoughlin, Mohammad Hossain and Melissa Di Rocco

Teagasc have extensive expertise in the area of residue analysis and have analytical capabilities for the detection of nearly two hundred residues in food, using a suite of validated analytical tests. We provide a range of ISO17025 accredited analyses for >130 residues in different food matrices. Methods can be adapted to client needs on request. Our laboratories use a range of modern equipment, which include six tandem mass spectrometer instruments. The methods used in our laboratories are comprehensive and sensitive to meet the demands of our stakeholders and clients.





Stand
13

Consultancy and Training Support

Presenters: Kevin Brennan and Gerard Barry

Stringent legislative principles clearly place the responsibility for assuring food safety on food company management. Commercial customers and retailers are conscious of the realities of market-place incidents and seek assurance from their food company suppliers on the adequacy and effectiveness of the control systems that are in place. To address these requirements, food quality management systems (incorporating food safety) must increasingly be robust to meet such demands, whilst also remaining cost effective in order to meet commercial objectives. Teagasc works with food companies to provide confidential training, consultancy and auditing services to ensure compliance with food safety legislative and industry requirements.



Stand
14

Meat Technology Ireland - Strategic Innovation, Maximum Impact

Presenters: John Colreavy and Michael Whelan

Meat Technology Ireland is an industry-led initiative that will build a strategic research and innovation base in beef and sheepmeat processing in Ireland. The Centre is a 'one-stop shop' for meat processing research and technology, serving as a hub to co-ordinate all beef and sheepmeat processing research needs.



An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

Stand
15

Department of Agriculture, Food and the Marine

Presenter: Ruairí Colbert

The mission of the Department of Agriculture, Food and the Marine (DAFM) is to lead the sustainable development of a competitive, consumer focused agri-food sector and to contribute to a vibrant rural economy and society. The Department, its staff and State Agencies, play a vital leadership role in providing and encouraging an environment which can deliver on this mission and on the strategic objectives set out for the agri-food sector in FoodWise 2025.

In pursuit of this, DAFM funds collaborative, national pre-competitive type research projects across the agri-food spectrum under its competitive research funding programme. DAFM also uses this competitive funding programme to enable Irish researchers participate in transnationally conducted research under programmes such as European Research Area Networks (ERA-NETS), Joint Programming Initiatives (JPI's), European Joint Programmes (EJP's), and the US-Ireland R&D Partnership.

DAFM also promotes and supports participation in the Societal Challenge 2 and the Biobased Industries Joint Undertaking elements of the EU Horizon 2020 Framework Programme on research and innovation relating to agriculture, food, forestry, marine and the bioeconomy.

Stand
16

Enterprise Ireland

Enterprise Ireland is the government organisation responsible for the development and growth of Irish enterprises in world markets. In this way, we support sustainable economic growth, regional development and secure employment. We have over 30 international locations facilitating access to more than 60 countries worldwide and all of our services are geared toward helping Irish companies build an international business. We work in partnership with Irish food entrepreneurs and food companies to help them to develop an export-led business, expand, innovate, become more competitive and develop their management capability so they are well placed to win export sales on global markets and in turn create new jobs in Ireland. Enterprise Ireland will present a number of supports available to companies to develop their business, including collaborative R&D with Teagasc and third-level institutes.



