

Teagasc National Prepared Consumer Food Centre Shay Hannon (NPCFC Manager)



National Prepared Consumer Food Centre

- Established in 2018 to support Research, Development & Innovation in the Prepared Consumer Food Sector
- State-of-art Pilot Scale Processing Equipment
- Research & Development in collaboration with Teagasc and other innovation support organisations
- Supporting Companies in piloting Industry-led Collaborative Research & Innovation Capability



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



NPCFC Pillars

PCF Centre

**Nutritional
Analysis &
Quality**

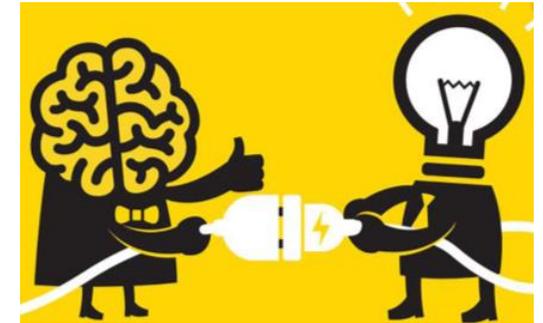
**Food
Innovation &
Product
Development**

**Advanced
Processing
Technology**

**Sensory
Analysis &
Quality**

**Food Safety
& Shelf Life**

NPCFC – Circular Innovation Pathway



How the NPCFC works with Food Businesses

- **Teagasc are the Science behind the Food Industry in Ireland**
- **First Step = Engage with Teagasc**
- **Project Development and Service Level Agreements**
- **Funding Options – Enterprise Ireland, LEO**
- **Knowledge Transfer & Confidentiality**



NPCFC – Space for Innovation

- Development Kitchen – Range of Processing Equipment
- Processing Hall – Large Scale Processing Equipment



Equipment Includes:

- ✓ Extrusion Technology
- ✓ Air Drying Technology
- ✓ Universal Processing Machines
- ✓ Microthermics HTST/UHT Unit



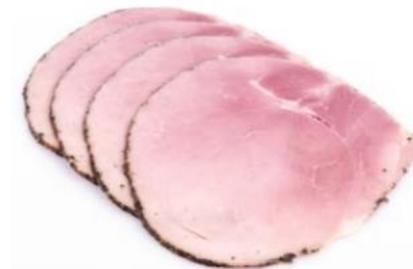
NPCFC – Bakery Development

- Flour - Breads - Pizza Bases - Biscuits - Pastry - Cakes
- ✓ Ingredient Formulation
- ✓ Dough Mixing & Proofing Analysis
- ✓ Sheeting/Cutting and Baking Analysis
- ✓ Range of Dedicated Baking Equipment
- ✓ Specialised Analysis Equipment



NPCFC – Meat Development

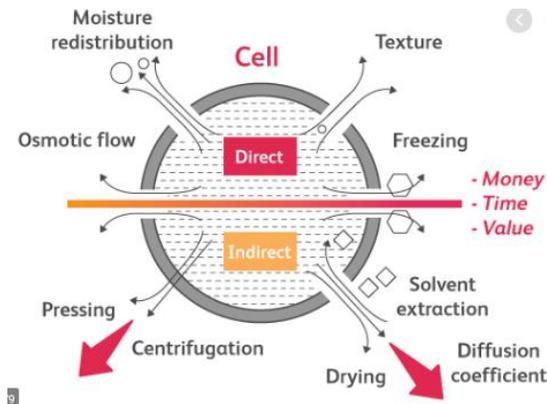
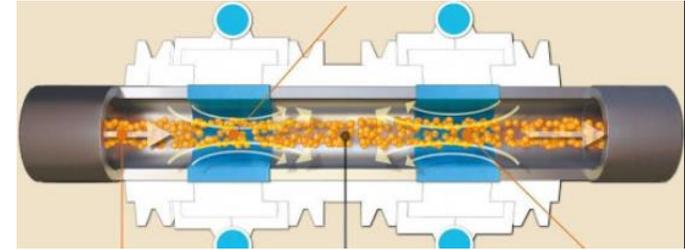
- **Capability to develop, process & pack a range of meat products**
- ✓ **Fermented Meat Capabilities**
- ✓ **Cured Meat Research & Development**
- ✓ **Capability to produce a variety of processed meat products**
- ✓ **Meat Slicing & Packaging Suite**
- ✓ **Dedicated Meat Research Laboratory**



NPCFC – Advanced Processing Technology

- **Advanced and Novel Technologies Including:**

- ✓ **Pulsed Electric Field (PEF)**
- ✓ **Ultrasound Technology**
- ✓ **Supercritical Fluid Extraction**
- ✓ **Hydrodynamic Cavitation**
- ✓ **Advanced Filtration Systems**



NPCFC – Food Safety Suite

- Advanced research on minimally processed Novel Foods and Processes
- ✓ Healthier foods - Less Salt/Sugar = Shelf Life Impact
- ✓ Longer Shelf life Required (Retailers & Export Markets)
- ✓ New Sustainable Packaging Formats – Food Safety & Shelf life is Key
- ✓ Dedicated Bio containment Suite for challenge studies)



NPCFC – Sensory Science Suite

- **Sensory Science - How people perceive sensory attributes using their five senses**
- **Considerably enhances the potential of a product's success**

Facilities Include:

- ✓ **18 Computerised sensory booths with adjustable lighting & controlled ventilation**
- ✓ **Eye-tracking glasses**
- ✓ **Facial expression analysis**
- ✓ **Galvanic skin response**
- ✓ **Virtual reality**



Case Study - Chocolate Mousse

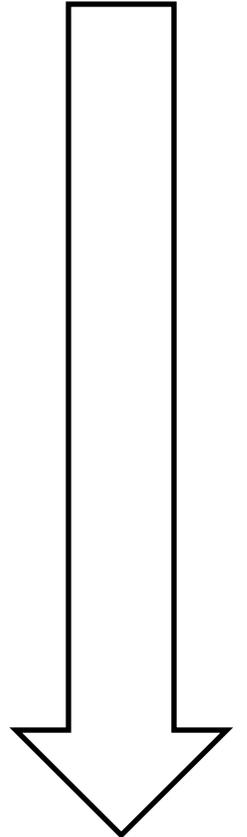
Developed with fresh Irish Cream

Step 1- Initial Product Trials in the NPCFC Test Kitchen

Step 2 – Initial Sensory Analysis & Recipe Adjustment

Step 3 – Production Scaling & Packaging

Step 4 – Shelf Life Analysis



Step 1- Initial Product Trials in the NPCFC Test Kitchen



Step 2 – Initial Sensory Analysis & Recipe Adjustment

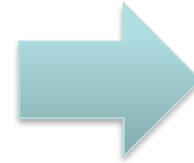


How do you like the product OVERALL?

☺ ☺ ☺ ☺ ☺

☐ ☐ ☐ ☐ ☐

Step 3 - Production Scaling & Packaging



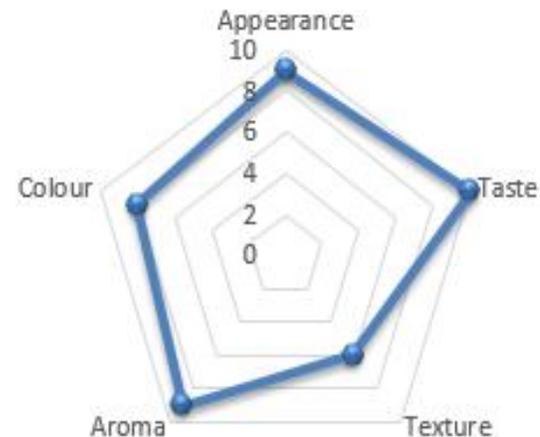
Step 4 – Shelf Life Assessment

1. Ongoing Microbiological Assessment

Using Accredited Laboratory and approved testing methods

2. Ongoing Sensory Assessment

Key Organoleptic Parameters including flavour, odour, appearance, texture and mouthfeel



Product Development Examples



Cheese



Yoghurts



Milk Based
Beverages

Product Development Examples



Fermented
Meats



Cured & Dry Aged
Meats



Ready Meals

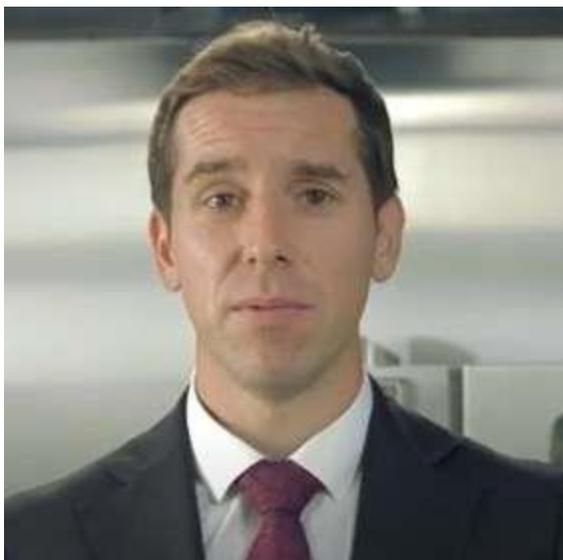
Product Development Examples



Freeze Dried
&
Air Dried
Fruits and Vegetables



Porridge & Oat Snacks



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The Irish Agriculture and Food Development Authority