

National Prepared Consumer Food Centre Portfolio



Teagasc, Ashtown



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



The National Prepared Consumer Food Centre (NPCFC) has been established by the Department of Agriculture, Food and the Marine in consultation with Teagasc, Food Drink Ireland's Prepared Consumer Food company members, Enterprise Ireland and Bord Bia, to support research, development and innovation in the Prepared Consumer Food sector.

The Centre contains state-of-art pilot scale processing equipment, which PCF companies can use for research and development in collaboration with Teagasc and other innovation support organisations. It also encompasses access to modern analytical and sensory laboratories to characterise foods in terms of nutritional, compositional, microbial and sensory profiles allowing complete product and process development.

The Irish Prepared Consumer Food (PCF) sector has an ambitious vision to be recognised amongst the most advanced, efficient and sustainable PCF sectors globally. Innovation capability is central to delivering this vision and the NPCFC allows manufacturers to cost effectively develop new products for commercialisation and address gaps in the food product development pipeline, through access to cutting-edge facilities and Teagasc know-how.

Innovation is a key driver of economic growth and Teagasc continues to be committed to supporting science-based innovation and the delivery of related services to the PCF sector. Teagasc recognises the diversity and complexity of the sector and offers specialist expertise, facilities and services in the broad areas of:

- Value added meat products
- Prepared meals, sauces and spreads
- Chocolate and sugar confectionary
- Non-alcoholic beverages, juices and waters
- Value added horticulture including fruit and vegetable-based products
- Bakery products including cereals, breads and biscuits
- Chilled and frozen ready meals

Teagasc is delighted to outline here, some of the key technologies and capabilities within the Centre. PCF companies are encouraged to engage with us and benefit from the use of the Centre within their own research and development strategies and/or by using the innovation support programmes provided by Enterprise Ireland.



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Food Product Innovation

The competitive position of food companies is very dependent on their capacity to develop innovative food products. The NPCFC supports the development of new and value-added prepared consumer foods from the initial recipe development and formulation of products, to pilot production trials which test product feasibility. The Centre houses a modern development kitchen, with a range of equipment for the production of kitchen-scale products that are repeatable and scalable. The pilot processing capabilities within the NPCFC facilitate the scaling of products from across the PCF sector. Technologies include drying, extrusion, pasteurisation/sterilisation, bio-fermentation, amongst others.

Chamber Drying System AIRGENEX® food

Capabilities

- Gentle drying at low temperature
- High quality drying results in short times
- Drying in a closed system
- Positive results in terms of bioactivity, aromas and appearance
- Temperature variable between 20°C - 90°C

Applications

- Crispy Nuts and Seeds
- Sprouted Flours
- Fruit
- Jerky
- Sourdough
- Fruit Leathers
- Vegetables



Firex Cucumix

Capabilities

- Electric tilting bratt pan
- Direct heating and built-in mixer
- 70L capacity and 300L capacity
- Rotation in both directions
- Speed regulation and time adjustment
- Pressure cooking function

Applications

- Vegetables
- Chocolate
- Braised foods
- Confectionery
- Sweet and savoury sauces
- Ready meals
- Homogenised products



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Blast Chillers and Freezers

Capabilities

- Freezing Capacity +70 to -18 °C in 240 min,kg
- Cooling capacity +70 to +3 °C in 90 min,kg
- Capacity: 14 gastro trays
- Core sensor with programmable thermostat

Applications

- Liquids
- Solids
- Ready meals



Y-Tron Jet Mixer Impeller Model ZC

Capabilities

- Suitable for dispersing difficult, wet gums as well as bulk materials
- Provides an air-free, homogeneous mix
- Dispersion of very high solids contents in a single pass

Applications

- Thickeners and gums, stabilizing and gelling agents
- Milk and whey based proteins
- High viscosity liquids such as sugar syrup and chocolate



Qbo Universal Processing Systems

Capabilities

- Three machines with capacities of 25L, 40L and 120L
- Evaporation cooking
- Blast chilling
- Cutting, mixing and homogenising
- Concentrates and vacuum cooking
- Ultra rapid product concentration processes
- Capable of preserving the nutritional properties of food
- Temperature control probe inside the sample

Applications

- Ready Meals
- Doughs
- Concentrates
- Chocolate
- Ice cream
- Confectionary



Freeze Drier

Capabilities

- 80kgs of water (as ice) dried in 24-hours
- 15 x 12-step recipe programming capacity
- Blast Freezers for use pre-freeze drying
- Endpoint moisture analysis

Applications

- Vegetables
- Fruits
- Meat
- Fish
- Nutraceuticals
- High value proteins
- Enzymes



Table Top Filling Machine – Riggs Autopack

Capabilities

- Deposit range of 125ml to 1200ml per cycle
- Stainless steel hopper with a nominal capacity of 40L
- Accurate depositing of hot or cold semi-liquid and solids-in-suspension products
- Controlled operation and foot pedal for fill start

Applications

- Ready meals
- Sauces
- Cake mixes
- Fillings



GEA Panda Twin Homogeniser

Capabilities

- Mixing
- Emulsifying
- Homogenising
- Two-plungers-double stage
- Product pressure up to 600 bar
- Capacity 30L/hr

Applications

- Fruit Juices
- Milk
- Soft drinks
- Beverages



Chocolate Tempering and Enrobing System

Capabilities

- Tank capacity 24kg of chocolate
- Heated vibrating table
- Fast melting and tempering cycle
- Enrober with double chocolate curtain, vibrating station, adjustable blowing unit, detailer, conveyor belt

Applications

- Filled chocolate pralines
- Solid chocolate bars with inclusions
- Enrobed chocolate and bakery products



Robot Coupe Vegetable Preparation Machine (CL 60 WORKSTATION)

Capabilities

- Grating, Dicing, Slicing, Chopping, Mashing
- Automatic Feed Head for all vegetables in bulk
- Pusher Feed Head specially intended for bulky vegetables
- 4 tubes feed head specially intended for long, delicate vegetables
- Multi-cut pack of 16 discs included
- Output per hour: up to 1800kg/hr

Applications

- All vegetables including:
- Bulky Vegetables (cabbage or celeriac)
- Long, delicate vegetables (cucumbers, courgettes)



Coating Drum

Capabilities

- 7 Litre Capacity
- Dual Speed function
- Temperature control

Applications

Coated sweets such as peanuts, hazelnuts and dried fruit coated with chocolate or other confectionery specialities



Robot Coupe Blixer 23

Capabilities

- Cross between a blender and a cutter/mixer
- Speeds of up to 3600rpm
- Purees most foods without the need for additional liquids
- 4 to 15kg capacity

Applications

- Hummus
- Vegetarian and Mediterranean spreads
- Processing of herbs, spices, seaweed in to fine powders



STERIL-FOOD COM 80

Capabilities

- Temperature range 40°C - 121°C
- 80 Litre capacity
- Temperature control probe inside the sample
- Counter pressure system to prevent can breakage
- Temperature, time and pressure registered on USB

Applications

- Suitable for small production and a wide variety of food products
- Sterilisation of preserved foods



Touchclave-E Autoclave

Capabilities

- 80 Litre Capacity
- Retort
- Steriliser
- Repeatable results which are scalable

Applications

- Vegetables
- Fish
- Ready meals
- Pet foods
- Beverages
- Sweet and savoury sauces
- Baby foods
- Plant based meals



Deck Oven

Capabilities

- Reinforced self-contained heating elements on top and bottom of each deck (4 decks)
- Digital independent steam generator in each deck
- Oven decks lined with stone slabs for stone baking
- Pre-set baking programs available
- Automatic control panel

Applications

- Snacks and crisps
- Oven-baked rolls
- Pastries
- Wide range of breads



Roll-in Combi Rack Oven

Capabilities

- Capacity for 20 trays
- Hot air cooking, steam cooking, combination cooking
- Mobile/roll-in racks and trays
- Automatic programming, with a wide range of different cooking programmes

Applications

- Baking
- Roasting
- Cooking



Planetary Mixer

Capabilities

- 30L capacity
- Adjustable mixing speed
- Attachments for mixing doughs/batters, mincing meat and slicing vegetables

Applications

- Yeasted doughs
- Sponge cake, muffins
- Egg whites
- Mayonnaise
- Icing
- Mincing meat
- Slicing vegetables



Clextral Twin Screw Co-rotating Food Extruder Evolum EV25

Capabilities

- 25mm screw diameter, L:D ratio of 24, options to test 6 to 10 barrels with cooling circuit and electrical heater
- Automatic opening system
- One top and one side feeding barrel
- Continuous HTST (High Temperature-Short Time) cooking
- Precise adjustment of the shearing and mixing
- Pre-conditioning kit and specific co-extruded die and filling tank with one pump and crimper

Applications

- Encapsulation
- Pet food and fish feed
- Cereal products such as pasta, snacks, flat crispy bread, couscous and breakfast cereals
- Snacks and breakfast cereals with sweet and savoury filling
- High moisture meat analogues and fibrised proteins
- Multigrain chips
- Pre-cooked flours



Microthermics UHT/HTST Lab-25EHVH Unit with Two Stage Homogeniser (GEA Niro Soavi NS2006) and Clean-Fill Hood

Capabilities

- Suitable for liquid and viscous fluids
- Small batches (3-5Ls min.). Up 10-12 batches per day is feasible
- Hot Fill, HTST & UHT capable
- Low to high viscosities
- Low and high acid products

Applications

- Formulation and scale up
- Quality assurance of ingredient blends and flavours
- Fouling studies
- Characterization of the performance of new ingredients
- Kinetic studies: Bacterial death (TDT), Nutrient Destruction, Quality Loss



Membrane Filtration Unit

Capabilities

- Automated lab plant for flat sheet membranes
- Feed pressures up to 64 bar (930 PSI)
- Flow measurement of permeate and concentrate
- Data logging and exchange via USB 2.0 port
- Suitable for ultrafiltration, nanofiltration and reverse osmosis membranes
- Suitable for laboratory work, membrane screening and quality control

Applications

- Separation
- Purification
- Concentration



Limitech Multifunctional Pilot Mixer

Capabilities

- Jacketed steam heating
- Direct heating by steam injection
- Jacket cooling
- High shear mixing
- Dispersion
- Agitation
- Vacuum

Applications

- Liquid and semi-liquid foods:
- Mayonnaises
- Sauces
- Dressings
- Cream Cheese
- Jams



Development Kitchen

The National Prepared Consumer Food Centre (NPCFC) houses a modern development kitchen, with a range of equipment for the development and production of kitchen-scale products that are repeatable and scalable. Developing a new food or drink product is a complex process and one of the key advantages offered is access to a diverse range of processing equipment. The Development Kitchen offers a confidential space in which clients can work independently, or with one of our Teagasc staff, on projects utilising specialist facilities and expertise.

Capabilities

Full range of commercial kitchen equipment to cook, chill, freeze, emulsify, homogenise, grind, blend, chop, mix and knead food products including:

- Robot Cook®
- Silverson® Homogeniser
- Blast Chiller/freezer
- Merrychef E3 Rapid cook oven
- Rational oven
- Sous Vide equipment
- Six Ring Gas Cooker & Bratt Pan

Applications

- Dairy and meat food preparations
- Bakery products
- Sugar and chocolate confectionary
- Soups and sauces
- Ready meals
- Savoury snacks
- Vegetable and fruit based products
- Fruit juices and soft drinks



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Meat Product Processing

Processed meats are a key component of many prepared consumer foods. In order to remain competitive, manufacturers must innovate to create products that are healthy, safe, convenient, natural and sustainably produced. The NPCFC provides access to a wide range of equipment of varying capacities for different meat processing applications. A suite of humidity chambers combined with in-house smoking facilities allows for the development of fermented meats with unique flavour profiles and extended shelf-life. The cured and processed meat equipment is flexible and facilitates various protein types and end products, ranging from traditional slow-cured pork to sous-vide pulled beef. Adaptable packaging capabilities allow for testing of MAP and skin packaging solutions. In addition, the presence of multiple small-batch systems facilitates concurrent trials during formulation and process optimisation. This enables processed meat manufacturers to develop new products more rapidly and cost-effectively in response to evolving challenges and trends.

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Vacuum filler RVF420 (Rex Technologie)

Capabilities

- Minimum load 45-50kg
- Filling pressure 40 bar
- Hydraulic lifting arm
- Rotary vane conveyor system
- High portioning accuracy

Applications

- Emulsions
- Filling large pieces of meat, sausages and salami



Piston Filler La Minerva Visn22

Capabilities

- Removable piston
- Adjustable speed
- Automatic start/stop with knee control
- Three funnel diameters 14, 22 and 30mm

Applications

- Meat emulsions
- Sausages
- Puddings
- Pasty fillings



Combi Press CP-50-E

Capabilities

- Airless pneumatic stuffing into casings, nettings or bags
- Max 9 cycles per minute. 7-9 pieces/min of rolled roast in netting. 2-3 pieces of ham/min in casing
- 300-1500kg/h depending on calibre of casing and length of log
- Mould length of 500mm

Applications

- Cooked meat products
- Dry-cured meat products
- Hams



Dorit Tenderizer M-88

Capabilities

- Independently controlled tenderiser head
- Knife head with 22 fix 4-knives 3x1mm offset in 4 rows
- Variable stitch rate
- 32/64 strokes per min
- Belt advance: 15-45mm, mechanically adjustable in 6 steps. Passing width: 270mm. Passing height: 200mm

Applications

- Any boneless products
- Fish & seafood
- Bacon & ham
- Beef
- Poultry



Inject-O-Mat 21 Needle Injector

Capabilities

- 21 continuously spraying, spring-loaded single needles (Ø4.0mm) in two rows
- Precision needle head with quick-change needle bridge system
- Needle carrier speed: 10-60 strokes per minute
- Passing width: 280mm. Passing height: 210mm
- High injection rates with minimal brine pressure

Applications

- Fish & seafood
- Bacon & ham
- Beef
- Poultry



Vacuum Tumbler 'Vario-Vac'

Capabilities

- Drum volume: 20L
- Max capacity including brine: 10kg
- Drum rotations per minute: 23rpm
- Rest time, cycles and total time adjustable

Applications

- Massaging cured products
- Dry salting
- Seasoning, marinating



Multi-tumbler System InjectStar®

Capabilities

- Batch size 3 x 30kg in 55L drums
- Variable rotation speed and direction (1.5-20rpm)
- Adjustable vacuum and processing time
- Cooling jacket and internal cooling aggregate
- Concurrent tumbling of small batches
- More efficient brine distribution and increased product yield

Applications

- Whole muscle products
- Fish
- Meat
- Poultry
- Marinated meat



Meat Shredder KT SH1

Capabilities

- Capacity approx. 90kg/hr
- Motor speed: 1340rpm
- Shreds cooked meat as fast as it is loaded

Applications

- Pulled beef, pork, chicken and plant based meat replacers (depending on the texture)



Dry Ager DX1000®

Capabilities

- Maximum meat capacity of 100kg
- Electronic temperature controller (0°C to 25°C)
- Humicontrol® electronic humidity controller from 60% to 90%
- DX AIRREG® optimal airflow, activated carbon filter & sterilisation
- Himalayan salt block for more intense flavour

Applications

- Dry aging beef
- Air drying cured hams, salami, sausages, bacon



Constant Climate Chamber HPP260 (Memmert)

Capabilities

- Precise humidity control 10%-90%RH
- Temperature control 0°C/10°C to +70°C
- Programmable temperature, humidity, fan speed, ramping times, illumination
- 250L capacity

Applications

- Stability or shelf-life tests
- Fermented meat products
- Testing photo-stability of meat products containing colorants



Skin Packaging Machine – Italian Pack

Capabilities

- Temperature Controller with PID control system and PT100 probe
- Vacuum and gas management through sensor and time
- MAP values controlled via digital vacuum controller
- Max standard tray height 120mm (D13 and D15 tray size)

Applications

- Poultry
- Fish & seafood
- Bacon & ham
- Beef



Henkovic MAP Packaging Machine TPS-XL

Capabilities

- Tray sealing
- Vacuum packing
- Modified atmosphere packing
- Four trays per batch, D2 and D13 moulds

Applications

- Meat products and preparations
- Ready meals



Packaging Technologies

Food businesses are constantly innovating in terms of products and packaging. Food packaging performs multiple functions such as containment, protection, preservation, product information, convenience, presentation and brand communication. The NPCFC packaging and testing equipment brings an innovative, economic and qualitative boost to PCF food businesses in Ireland. The Centre houses a range of versatile packaging and testing equipment that can be applied to products across the sector from raw, semi-cooked and ready to eat liquids to semi-solid, solid, dry and granular food products.

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Colimatic Thermoformer Thera 250

Capabilities

- Rigid and flexible packs
- Modified atmosphere or vacuum packs
- Perimetral sealing plates for any configuration of pack
- Dedicated cutting systems
- Photocell for printed film detection

Applications

- Ready meals
- Prepared consumer foods
- Meat and seafood



MF Tecno Vertical Form Fill Machine MF 50

Capabilities

- Temperature control system for bag sealing
- Modified atmosphere packaging
- High production speeds
- Suitable for solids and liquids

Applications

- Solid granular and non-granular products
- Pet food
- Confectionery products
- Snacks
- Pulses
- Dried fruit
- Liquid products, dairy products, products in brine



Rotopack Semi-automatic Fill Seal RPX5

Capabilities

- Semi-automatic sealing machine for preformed trays in PP, PE, PS, PET, AL
- Teflon coated sealing plate
- Profile cutting to the tray size with possibility to create an easy peel angle to facilitate the tray opening
- Digital temperature controller with PT 100 probe
- Adjustable sealing time

Applications

- Thick dairy products such as yogurts
- Sauces, creams, cheese spreads
- Desserts (puddings, mousse)



Easy Flow Horizontal Flowrapper

Capabilities

- Fully electronic
- Packing speeds up to 80 packages per minute

Applications

- Bakery products
- Fruits and vegetables
- Cereal and protein bars



Colimatic Automatic Tray Sealer TDF 1000E

Capabilities

- Sealing
- Partial vacuum
- Modified atmosphere
- Skin packaging

Applications

- Ready meals
- Prepared consumer foods
- Meat and seafood



Rotopack Semi-automatic Tray Sealer Rapida Plus with Gas

Capabilities

- Sealing
- Vacuum packing
- Modified atmosphere packing

Applications

- Liquids products
- Semi thick and thick products
- Viscous product
- Suitable for dairy product



Lanico Can Seamer Machine V110 P

Capabilities

- Can seaming
- Up to 850 cans/h

Applications

- Fruits
- Vegetables
- Beans
- Soups
- Meats and seafood
- Desserts



Package Testing Equipment

Capabilities

- Oxygen Permeation Testing Analyser
- Water Vapour Transmission Rate (WVTR) Permeation Analyser
- Headspace Gas Analyser
- TGA/DSC Equipment for simultaneous thermal analysis
- Texture Analyser (tensile strength, Young's modulus, elongation at break, puncture strength)
- Oxidative Stability Testing

Applications

A range of advanced, high-tech testing equipment, allows the evaluation of a wide range of food packaging and film properties



Advanced Technologies

Over the past several decades, the focus of the food industry has shifted from classical technologies towards advanced food processing, preservation and extraction technologies. This shift is attributed to: a) increased consumer demand for safe and nutritious food; b) the need for improved process and energy efficiency; and c) legislative and regulatory requirements aiming to minimise the use of chemical preservatives. Advanced food processing technologies including pulsed electric field, plasma technologies, cavitation technologies and UV light based technologies offer numerous advantages, including improved safety profiles, nutritional, shelf-life and sensory properties of foods. Such novel technological approaches are sustainable and can be applied to a range of prepared consumer foods.

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Pulsed Electric Field

Capabilities

- Meat tenderisation
- Nutrient retention
- Improved shelf-life
- Nutritional and bioactivity retention
- Improved process efficiency
- Improved brine and marination processes
- Low temperature preservation
- Reduced water and energy consumptions

Applications

- Liquid (juices, milk, smoothies)
- Solid food (Meat, seafood, poultry, fruit and vegetables)
- Food pasteurisation



Cavitation Technologies

Capabilities

- Inactivation of bacteria on food matrices
- Meat tenderisation
- Emulsification, homogenisation, hydration, extraction and accelerated curing and brining
- Drying and defoaming
- Enhanced cell disruption and mass transfer through cavitation

Applications

- Solid food (meat, seafood, poultry, fruit, vegetables, grains)
- Liquid (fruit juices, milk)
- Milk powders



UV Light System

Capabilities

- Disinfection of produce surfaces, packaging, and other food contact surfaces
- Ensures food safety
- Improved shelf-life
- Produces no chemical residuals
- Versatile technology
- Environmentally friendly

Applications

- Solid food
- Meat
- Seafood
- Poultry
- Fruit
- Vegetables



Microwave Extraction

Capabilities

- Mixed microwave and ultrasound (SINAPTEC Technology)
- Significant shortening of processing time
- Reduction in the use of solvents
- Suitable for clean and green solvents
- Enhanced extraction yield and productivity
- Rapid internal heating by microwave energy
- Improved process efficiency

Applications

- Extraction of various bioactives from food materials
- Value addition to food processing by-products
- Module for recycling plant extract residues into fuel pellets
- Extraction of proteins and other biomolecules



Cold Plasma

Capabilities

- Inactivation of bacteria on food matrices
- Reduction in use of chemicals for food preservation
- Improved shelf-life
- Rapid and cost effective
- Clean technology that can replace chemical sanitisers
- Energy efficient

Applications

- Solid food (meat, seafood, fruit, vegetables, dry food)
- Liquid (juices, milk, smoothies)



Microplate Reader

Capabilities

- UV-Vis measurements in 6 to 384 well microplates and cuvettes
- Allows endpoint, kinetic, spectral scanning and well area scanning modes, plus incubation and shaking

Applications

- Biomarker assays
- Cell-based assays
- Cellular and microbial growth
- Elisa and related immunoassays
- Nucleic acid quantification



Supercritical Fluid Extraction

Capabilities

- Reduction in use of chemicals for food preservation
- Efficient way to extract valuable constituents
- Extraction and purification all in one step
- Use of non-oxidant medium
- Reduces use of energy, water and chemical solvents
- Clean technology that can replace chemical sanitisers
- Carbon dioxide (CO₂) is the fluid most often used

Applications

- Extraction of bioactive compounds and essential oils from herbs
- Functional ingredients from micro and macro algae
- Removal of lipids from food
- Application in food safety: fraud, adulterations and residual contamination



Fluidized Bed Dryer

Capabilities

- High rates of moisture removal
- High thermal efficiency
- Reduced contact time for drying
- Reduction in the moisture content of powder and granules

Applications

- Ideal for removal of surface and bound moisture in powder, crystalline or granular materials
- Granulation of food materials



Oil Press OW510s-inox

Capabilities

- Processing up to 100 types of oilseeds into valuable oils
- Temperature-accurate cold or warm pressing of valuable oils
- Stepless speed regulation
- Up to 25kg of pressed material per hour (depending on purity and density of seeds)

Applications

This oil press can be used for processing up to 100 different types of seeds including apple seeds, argan, cotton kernels, chia, peanut, fig, hemp, hazelnut, shea, coconut, cumin, pumpkin, flax, camelina, madcadamia, almond, poppy, moringa, palm kernel, rapeseed, Sacha inchi, safflower, sea buckthorn, black cumin, mustard, sesame, soy, sunflower and walnut.



Filter Press

Capabilities

- Liquid/solid separation through pressure filtration
- Compresses and dewater solids concentration providing clearer filtrate solutions
- 32mm cake thickness
- Manual Hydraulic Closure System

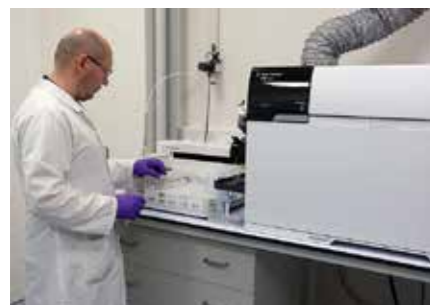
Applications

- Fish Oils
- Sunflower Oil
- Rapeseed and
- Linseed oil



Nutritional and Compositional Analysis

The application of advanced analytical techniques is critical for the development of innovative food products, in particular, those with enhanced nutritional claims. The NPCFC encompasses a comprehensive facility to produce the relevant analytical results and satisfy a wide range of product label claims. The suite of analytical methods available within the NPCFC allows for the determination of macronutrients, sugars, minerals, water soluble and fat soluble vitamins, supporting and enhancing the product development activities within the Centre.



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Mineral Analysis System

Capabilities

Inductively coupled plasma mass spectrometer:

- Allows accurate analysis of trace and major elemental minerals in a range of foods
- Modern robust system with broad linearity, allowing a broad range of minerals to be analysed without dilution
- System also suitable for single nano-particle analysis

Applications

Cost effective solution for elemental analysis:

- Key nutrients: Calcium, iron, potassium, magnesium, zinc and selenium
- Analysis of Sodium
- Food safety including heavy metals such as lead, cadmium and mercury

Carbohydrate Analysis System

Capabilities

- Ion chromatography system that is capable of measuring mono-, di-, oligo-, and polysaccharides in a single analysis
- Highly specific electrochemical detector, which allows unrivalled sensitive analysis of sugar free products
- Allows measurement of carbohydrates across a wide range of concentrations

Applications

Comprehensive measurement of sugars in prepared consumer food products:

- Analysis and profiling sugars in food and beverages
- Authenticity of food and beverages

Vitamin Analytical Platform

Capabilities

- Rapid analysis of vitamins in food samples
- High capacity sampling system
- Unique ionisation system to provide improved sensitivity for fat soluble vitamins
- Allows quantitation of vitamins across a broad range of concentrations

Applications

Comprehensive measurement of vitamins in prepared consumer foods:

- Fat soluble vitamins: A, D, E and K
- Water soluble B and C vitamins

Sensory Analysis

Sensory Analysis and Consumer Studies

The Sensory Suite in the NPCFC includes 18 tasting booths, preparation kitchens, panel training facilities and sensory software packages. Teagasc sensory researchers and technologists can support food and beverage companies using a wide range of sensory analysis and consumer studies applications.

Capabilities

- Full range of discrimination tests (including triangle tests, duo-trio, paired comparison and difference from control)
- Trained descriptive sensory panels employing classic and newer, more rapid sensory methods
- Dynamic sensory methods
- Sensory shelf-life studies
- Quantitative and Qualitative consumer studies

Applications

- Product Development
- Quality assurance profiles
- Benchmarking against competitor products
- Optimising the shelf-life of current and new products
- Understanding consumer perceptions of products and drivers of liking

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Biometric Technologies for Sensory Science

Capabilities

- Facial expression software for measuring changes in facial expressions while eating
- Eye-tracking glasses for recording consumer's eye movements / natural gaze behaviour
- Galvanic Skin Response (GSR) for measuring changes in the electrical characteristics of the skin
- Electroencephalography (EEG) helmet for recording the electrical activity of the brain

Applications

- These technologies will be used to overcome the biases of traditional sensory techniques to better understand consumer's true reactions towards food products
- Applicable to all food and beverage products



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