



Emerging technologies offer opportunities to improve product quality or process efficiency. An ongoing member funded project has, this year, looked at the impact of pulsed electric fields (PEF) on fresh vegetables, meat curing, coffee extraction and hop extraction. The results were particularly interesting when pulsed electric fields were applied to potato.

PEF treated chips

When cutting the potatoes into chips, for example, prior PEF treatment reduced the cutting force needed. This is because PEF can punch holes in larger cell membrane structures, which can result in leaching of cellular contents and changes the physical properties of the material. When fried, as chips, the PEF treated potato did not absorb more fat, but did taste sweeter. Additionally, the PEF chips were lighter in colour than the non-PEF chips.

The 'New Technologies' member funded research project has been running in various forms since 1990, and the most recent incarnation is looking at new technologies nearer to market, as well as a range of medium- to long-term technologies. Continuous flow microwave processing is available in our pilot plant (for a limited time), this offers the opportunity for rapid heating with improved food quality.

Exploring pulsed electric field processing

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www.campdenbri.co.uk/new-technologies.php

South Korea office

We recently welcomed a group of visitors from South Korea to discuss our ongoing research collaboration with FOODPOLIS - a multibillion dollar initiative by the Government in South Korea to establish a national cluster to support the food industry in Korea and North East Asia. The visitors included representatives from FOODPOLIS, Dongguk University and BTC - a local nutraceuticals company.



Around 150 enterprises, including overseas companies, will establish a base within the cluster and will be supported by technical support teams, pilot scale production facilities, three research centres as well as nearby universities and the National Research Institute.

Campden BRI has been working with FOODPOLIS over several years to help in the design and planning of the associated research facilities and has established an office within FOODPOLIS to provide local technical support.

Wheat lipids offer route to health benefits

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Results from research we contributed to indicate that increasing the natural polar lipids in wheat could increase health benefits by allowing the reduction of salt and the amount of bakery fat or emulsifier used without compromising dough stability. The research, published in Food Hydrocolloids, found direct evidence that polar lipids, such as galactolipids, are enriched at the air-water interface and contribute towards improving gas bubble stability in bread dough.

Switch channel



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Competencies for food graduates

www.ifst.org/knowledge-centre-other-knowledge/competencies-food-graduate-careers

We were delighted to contribute to the publication 'Competencies for Food Graduate Careers' which summarises the key behaviours, knowledge and skills that are desirable in a food science graduate. The online interactive tool will be openly accessible in the New Year, to be used by students to help identify and pursue careers suited to their strengths; employers to help with recruitment and selection; and educators to help ensure courses reflect the needs of the food sector.

It was compiled by The University of Nottingham with a range of stakeholders including Fresh Cut Foods, Greencore, MorePeople, PepsiCo, Sainsbury's, Warburtons, and Campden BRI.

Sensory method innovation

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A new consumer method called S-TDL or Simultaneous Temporal Drivers of Liking can help identify acceptable sensory characteristics of food. The originality of the method lies in consumers explaining what they can taste, and how much they like the taste, as they consume products. The method can identify the 'dominant' or noticeable sensory characteristics that significantly increase and decrease acceptance.

Our Innovation and Insights Team, in collaboration with European partners (ESN), pilot tested this new method with regular cheese consumers in six countries, who assessed 4 cheeses for perceived sensations and liking over a 60 second period. Results highlighted different liking patterns across countries, with some consensus on a preference for a melting, tender and fatty texture. The research was published in Food Research International.



Sausage services

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Sausages feature regularly in consumer shopping baskets. There are some truly innovative recipes, particularly in restaurants, which can elevate this traditional food to gourmet status.

There are a huge range of sausage types and recipes, but most products contain a cereal or starch to absorb and hold water. This is often crucial to texture and succulence. Choosing the correct starch or binder will enable the sausage to be processed efficiently and provide the desired texture in the cooked product.

There is an array of starch and binders available to manufacturers, including those traditionally used, such as rusk, and alternatives driven by the desire for clean and 'free from' labels.

It's important to get the recipe and process right - we have a range of equipment to manufacture sausages including mincers, bowl cutters, blenders, fillers and packaging options and can help develop and test new sausage formulations on a pilot scale. We can also assess the quality of products, help to improve taste and texture, and increase shelf life.



Top hits 2017

To make sure you haven't missed this year's best bits here's a roundup of some of our popular items from 2017.

HACCP non-conformances

www.campdenbri.co.uk/blogs/haccp-audit-non-conformances.php

In this blog Clare Sant talks about the top five HACCP food audit non-conformances and how to improve your HACCP plan. HACCP systems are the basis for your company's due diligence defence. To avoid non-conformances it's critical to make sure your HACCP plan is effective.

Rapid microbial identification

www.youtube.com/watch?v=W80pAYLEDE4

We have greatly enhanced the capacity and speed of our microbial identification capabilities by acquiring a MALDI-ToF (matrix-assisted laser desorption/ionization time-of-flight) mass spectrometry system. This video explains how it can be used to rapidly identify microbes.

See inside a cake

www.campdenbri.co.uk/services/structure-of-food.php

See inside a cake while it bakes! CT scanning can assess the formation of structure during baking, comparing the effect of different ingredients and processes. It can also be used to understand the origin of particular structures or faults.

Emerging ingredients

www.campdenbri.co.uk/research/emerging-ingredients.php

This member funded research project is providing members with a wide range of information on ingredients that are emerging worldwide, including information on how they could be used.





Specification support

There are many factors to consider when creating specification templates for raw materials or finished products. This webinar outlines the available tools and best practice for managing product specifications and artwork
www.campdenbri.co.uk/webinars/product-specifications.php

This case study, with Scottish family company Baxters, shows how we worked in partnership to support their in-house technical team with the management of product specifications for three of its sites. The product specifications were for a range of products sold around the world.
www.campdenbri.co.uk/case/product-specifications.php

FSA's relationship with consumers and industry

www.campdenbri.co.uk/podcasts/39th-annual-campden-lecture.php

In our Campden BRI Day lecture podcast Heather Hancock, Chairman of the Food Standards Agency delivers a candid consideration of the FSA's relationship with consumers and industry - and in particular on science, sustainability and character - in 'A coming of age of the Food Standards Agency'.



Investment in new kit and equipment

www.campdenbri.co.uk/tours/pilot-plant.php
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Investment in new kit and equipment consolidates and expands the services we offer to support members and clients. Examples include:

- A blast chiller / freezer (see page 8) - it can blast chill, blast freeze or individually quick freeze products on a fluidised bed
- A dealcoholisation unit (see page 8) - can be used for detailed assessment of new product quality and process economics
- VolScan 600 - uses lasers to measure the volume and shape of food products, providing dimensional analysis, weight and specific volume of products
- Mainca Bowl Cutter CM-21 - used to cut up fresh and frozen meat, fish, vegetables, fruit and other food to produce a variety of textures as required
- CO₂ and dissolved oxygen meter - a quality control tool to measure carbonation levels in-pack (e.g. bottles)
- Farinograph - Farinograph testing assesses the baking quality of flour samples. The computerised data processing enables electronic data storage and offers potential for improved test quality and predictive capability
- Tray sealer - expands our packaging development and testing capability for clients looking at either, or both, the packaging and the product



Training

The dates for 2018 training courses are now available on our website www.campdenbri.co.uk/training.php or request a booklet from training@campdenbri.co.uk +44(0)1386 842104

January training courses

- 16-17 Internal auditing - principles and practices
- 23-24 HACCP - intermediate (level 3)
- 29-2 Feb HACCP - advanced (level 4)

Tailored training

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An increasing number of clients are now asking us to run some of our training courses at their own sites exclusively for their own staff. This can be a more cost-effective and a more time-efficient training solution and offers great potential as a team-building exercise.

Bespoke training to match your needs

A significant advantage for clients who choose tailored training, is that parts of many courses can be tailored to address your particular business issues and problems.

Member zone

www.campdenbri.co.uk/memberzone.php

to access privileged member information and services

Member funded research programme voting results 2018

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Each year our members decide how we should invest over £2m of your membership fees in research that can help your company to succeed. This year you have selected the following projects that complement about 40 existing ones.

Safety

- Next generation methods for microbiological and chemical food safety
- Rapid methods for hygiene determination

Quality and value

- Microbiological shelf life testing - new approaches
- Functionality of novel ingredients from natural sources
- Novel natural preservative systems for use in drinks, sauces and other high a_w foods
- Inactivation of bacterial biofilms - new approaches
- Design and modelling of the impact of food structure on food texture

Nutrition, health and well-being

- Clean label sugar reduction

Resilience and efficiency

- Mitigating food fraud - best use of analytical screening tools

Skills and knowledge

- Sampling for hazards: a practical guide

At our winter Member Interest Group round, members will get the chance to help shape and direct these projects. Please come along and have your say.

Club project Chocolate and confectionery club

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We are inviting companies to join research to evaluate viable routes to reduce sugar and fat in chocolate and related products, and explore new techniques for the assessment, and potential mitigation, of moisture and fat migration. The project will provide a better understanding of the factors that influence quality and help to prevent or delay quality defects such as bloom development. It will also provide a detailed evaluation of the ways to reduce sugar and fat in chocolate-based confectionery to help companies optimise recipes for reformulation.



100th Member

BaxterStorey recently became our 100th new member of the

year. With a mission to provide the best in fresh local seasonal produce, the hospitality services provider prides itself on its entrepreneurial approach, creating innovative food and drink concepts driven by its talented and skilled professional teams.

Sue Howlett, Technical Manager (pictured with Bertrand Emond) said: "We are delighted to have joined Campden BRI - they are able to provide us with the practical, technical, scientific and regulatory support we need, all under one roof."



Welcome to new members

We are delighted to welcome the following new members:

Al Ain Farms for Livestock Production - manufacturer of dairy and camel milk products, juices and eggs

Beavertown Brewery - independent brewery

Bol Foods - manufacturers of lunch pots and salad pots

Cornish Charcuterie Ltd - producer of jarred pates and rillettes

County Food Ingredients Ltd - butter oil processors and packagers

Gourmet Candy Company - developers and marketers of confectionery products

Mood Foods Ltd - chocolate manufacturer

Nourisher Food & Drinks Ltd - manufacturer of frozen drink pods and frozen texture modified foods

PEP SAS - producer of egg products

Pets Choice Limited - pet food manufacturer

SPeaR Associates Ltd - bulk dairy ingredient brokers

Unicorn Ingredients - importer and exporter of seeds

Valio Ltd - dairy research and development centre

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Please notify the Membership Department of any changes to your company's name or address to allow us to keep our records up to date.



New blast chiller-freezer

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We have invested in a new blast chiller-freezer to support trials for clients and members. It can blast chill, blast freeze or individually quick freeze products on a fluidised bed. The blast freezer section contains removable trays on which the food samples to be frozen are placed. Temperature settings can range from 10°C down to -34°C, and the air speed varied up to 10 m/s. The product can be viewed through observation panels, and the environment and product temperatures and rates can also be monitored.

See the video of it at campdenbri.co.uk/news/freezer.php

New dealcoholisation equipment

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We have invested in new dealcoholisation equipment to help members and clients develop novel low or no alcohol drinks.

The equipment reduces the ethanol content using membrane filters such as molecular filtration or reverse osmosis. Other methods commonly used to produce low alcohol products tend to produce products that are noticeably different from their alcohol containing counterpart or can result in heat damage.

Results from the dealcoholisation kit are scalable to full-size plant, so it can be used for detailed assessment of new product quality and process efficiency. Trials can be supported by our analytical services, sensory services and process performance assessments.

Pilot plant facilities for food and drink

information@campdenbri.co.uk

We have a huge range of food and drink pilot plant facilities, covering over 3000m², to help you develop new products and technology, analyse existing processes, and evaluate ideas for the future. The pilot plant is also ideal for processing and preservation training. Explore our pilot plant online - www.campdenbri.co.uk/tours/pilot-plant.php

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For other sites, see
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