

Modelling of the impact of food structure on food texture

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Texture is an important sensory characteristic of many food products. Developing or reformulating products typically requires production and evaluation of many process and recipe variations to identify those that have the required structure and texture. This can be time consuming, involving use of costly pilot production facilities and sensory panels.

A new member funded research project will develop an improved capability to design products with the required texture by modelling the effects of differences in structure, and understand how process conditions can be used to create the required structure for a range of product types. It will demonstrate these capabilities through case studies, evaluate the effect of reformulation on texture and establish computer modelling facilities and expertise. ■

Please get in touch if you would like to be involved in the project.



Newsletter





News

Leading research into English wines

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The appointment of our wines and spirits expert, Geoff Taylor, as chair of the UK Wine Producers research and development group, helps us to continue to lead research into UK wines.

UK wines have evolved enormously both technically and analytically since Geoff started working with the wine industry over thirty years ago. He will help UK wines to advance further by ensuring that the technical and sensory aspects of research are developed to their full potential.

The group will encourage, assist and support research projects to improve quality, yield, consistency and sustainability within the wine industry. ■

Our experts at events

Geoff Taylor will be presenting "Quality challenges facing bulk wine" at the International Bulk Wine and Spirits Show (ibwsshowuk.com) on 27 February at Royal Horticultural Halls, London.

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For other sites, see
www.campdenbri.co.uk/campdenbri/contact.php

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New members

We are delighted to welcome the following new members:

The Hershey Company - chocolate manufacturer

Gousto - recipe box retailer

Ankerbrot Gmbh & Co KG - large industrial bakery

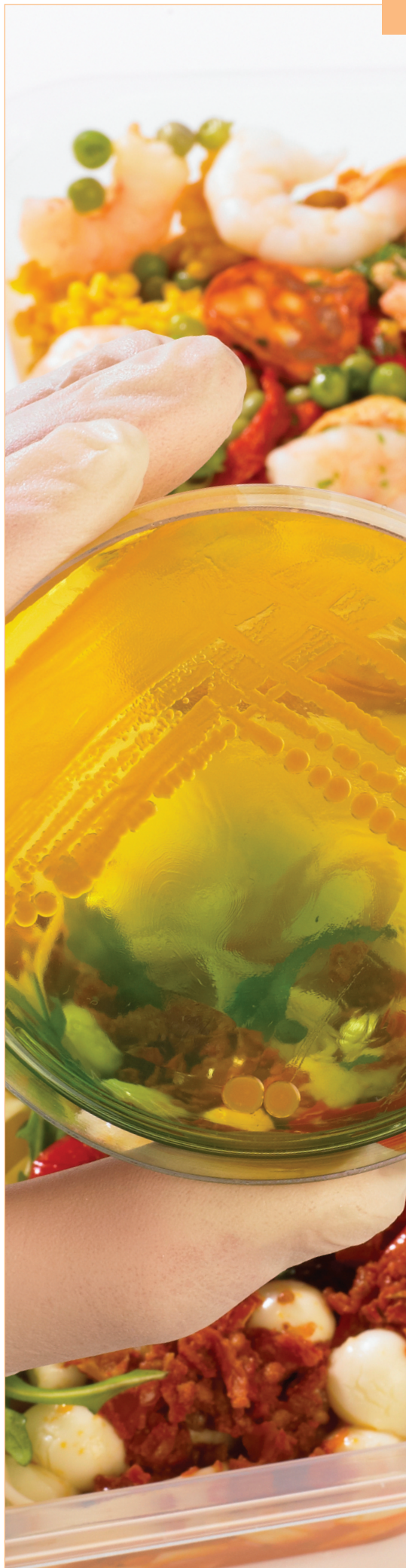
Alpheus Environmental Ltd - design and build of waste water treatment plants

Bohanna Consultancy - designer of hygienic equipment

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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.





Nine things to think about when choosing new microbiological methods

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Numerous rapid tests are available for a range of microbial types. To choose the correct method you need to carefully analyse what you do now and how you'd like to improve it, as well as answer some fundamental questions:

- 1 **What do you need to test for?** Pathogens, indicators, spoilage organisms? Do you need a rapid method for them all?
- 2 **How many tests will you do per day?** Do you have any constraints on staff numbers or laboratory space? Manual tests require more staff input whereas fully automated systems can handle tens or hundreds of samples a day with minimal staff input.
- 3 **How quickly do you want results?** Faster results usually come at a cost.
- 4 **What skill level is required for a new test?** Some tests require skilled staff for interpretation of results; other "black box" type tests issue a final result from the entered sample.
- 5 **What are you willing to spend on specialist equipment in order to do a new test?** Some methods require a very large outlay on capital equipment - others may require very little.
- 6 **What consumable cost are you willing to accept?** Some of the more technical methods require relatively expensive consumables that drive up the cost per test. However, these tests may reduce product quarantine periods or the need for warehousing.
- 7 **What are the servicing/calibration costs for the new method?** Most methods will require the equipment to be serviced and calibrated at least annually, particularly if the method is part of an accredited test.
- 8 **Will the method work? Will it give you accurate results?** The best way to consider this is to look at whether the method is validated and certified by an independent third party. Campden BRI are an expert microbiological validation laboratory for a number of bodies.
- 9 **Acceptability of the method - is the method allowed within legislation?** Legislation or specifications may only allow a particular named method to be used or may not permit certain methods.

By taking a careful, structured approach, your laboratory can develop excellent new methods that help you rapidly deliver high quality test results. ■

Need more information on microbiology?

Please search 'microbiology' at www.campdenbri.co.uk

The impact of ingredients on bread structure and quality

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It's important to understand the impact of different ingredients on structure and texture when considering the formulation or reformulation of bread. Past member funded research projects have looked into the functionality of a range of ingredients in bread, and their impact on bread quality.

Waxy wheat flour

The use of waxy wheat flours could lead to a cleaner label product as enzymes and emulsifiers are usually used to control bread firmness. A member funded research project showed that loaves that included waxy wheat flour had a lower initial firmness and stayed softer than the standard loaf for the first five days. The inclusion of waxy wheat flour also gave higher specific volume loaves, however the loaves had a coarser internal structure.

Bran flour

Most UK adults aren't consuming enough fibre. Enriching fibre levels in bread could have a positive impact on the national diet. We investigated the effect of different processes and ingredients on the quality of wheat and oat bran bread. The results showed that the type of mixer used to produce the dough could significantly increase the bread volume. However, pre-soaking and finer flour particle size did not improve the quality of the fibre enriched bread.

Salt

Many bakery manufacturers want to reduce the levels of salt in their products. However, salt plays an important functional role as it controls the behaviour of water. We



found that halving the salt level of starch gels made them harder and increased retrograded starch levels at both refrigerated and ambient temperature - this produced a firmer loaf.

Gluten-free

The production of gluten-free bread can be difficult as dough structure development traditionally relies on the interaction between the process used and properties of the flour. Research we conducted showed that the quality of gluten-free bread can be improved by modifying dough production and processing. The dough was processed at a lower temperature for a longer time. Once the starch in the system started to gelatinise, it 'took over' the maintenance of the bubble structure. The temperature was then raised to achieve a final product with the desired crumb and crust properties. ■

If you want to know more about our research into methods to measure the structure and physical properties of food or the functionality of ingredients in bread please search 'bread structure' at www.campdenbri.co.uk

Novel ingredients from natural sources

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Our research into the functionality of ingredients in bread is continuing. A new member funded research project will investigate the functionality of novel ingredients from natural sources.

There are numerous cereals and plants that contain elevated levels of components that may show specific functionality in the processing of foods, such as foaming, emulsifying, and waterbinding. Functions of interest will be examined and evaluated against existing additives with similar functional properties, providing practical information on the functionality and application to food systems of the most promising natural materials. ■

Please get in touch if you would like to be involved.



Designing packaging for older consumers

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The over 65s are an important market as this is the fastest growing segment of the UK population. The ageing process is accompanied by a decrease in sensory perceptions such as smell, taste, vision and hearing, as well as body movement. Therefore there is a requirement for food and drink products that meet these changing needs.

We carried out observational interviews to understand the challenges that older consumers face when opening packaging. This was done as part of a member funded research project on designing food and drinks for personalisation of diets for different life stages. We asked consumers how easy it was to read and understand the food preparation instructions on packaging. The products that consumers rated as the most readable and understandable were those that used large, bold text and clear and simple instructions.

We also asked the consumers to assess how tab size affects how easy it is to peel back the film lid on ready meals. The preferred tabs were those that were large, easy to tear, came away cleanly with little resistance and no tearing.

Our consumer testers also said they had problems opening induction seals, jars and cartons. ■

More information is available, please search 'packaging' at www.campdenbri.co.uk

Member zone

to access privileged member information and services

MIGs, research outputs, access to experts and Food Law Alert all provide key ways of keeping up to date

Tapping into funding

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We have worked with members on numerous successful bids to secure funds for research projects from Innovate UK. We understand how to pitch a project bid to maximise its chances of success. We monitor upcoming opportunities for funding.

The 'competitions' that Innovate UK already have lined up for 2018 span five categories:

Sector competition	Open date
Manufacturing and materials	May and November
Open competition - any technology or sector	June and December
Infrastructure systems	July and January
Health and life sciences	October and February
Emerging and enabling technologies	September and March

If you would like to find out how we can help you to apply for project funding please get in touch. ■



FAQs

Member service account (MSA)

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www.campdenbri.co.uk/members/member_service_accounts.php

This provides an easy way to access many of our services. Here we address some common questions.

What is my member service account?

At the start of each membership year 20% of your membership fee is automatically placed into a member service account, for use during the year.

What can MSA be used for?

The funds in the MSA can be used against most of our services including technical, scientific and legislative advice or enquiries, consultancy, contract work, training courses, events and Campden BRI publications.

How do I use MSA?

Please advise the person you are dealing with that you wish to use your MSA as payment. ■

If you want to discuss membership or anything related to your MSA please contact membership officer Angie Deaves.

Mailing preferences

We want to make sure that we only send you information that interests you. Through our website you can update your preferred topics and whether you want our newsletter by e-mail or post. Go to campdenbri.co.uk/optin.php to review what is available and select your preferences. ■

For more information search 'preferences' at www.campdenbri.co.uk

Just published

Three new ingredient insight factsheets

The latest in a series of factsheets produced as part of our *Emerging ingredients – considerations for use in products* project. The factsheets look at novel alternatives to sugar.

- | | |
|-------------|---|
| Factsheet 4 | Lucuma powder (<i>Pouteria lucuma</i>) |
| Factsheet 5 | Yacon syrup (<i>Smallanthus sonchifolius</i>) |
| Factsheet 6 | Mesquite flour (<i>Prosopis</i> spp.). ■ |

For more information:
www.campdenbri.co.uk/research/emerging-ingredients.php

New white paper

Predictive microbiological models - what are they and how can they be used in the food industry?



Predictive microbiological models are computer based software packages which allow the user to estimate the rate of microbial growth or get an indication of whether growth of a particular microorganism will occur under a specified set of conditions. ■

For more information search 'microbiology' at www.campdenbri.co.uk

Regulatory update

Considerations for sports foods

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Since 20 July 2016 sports foods are now exclusively governed by horizontal food law, such as the legislation on:

- nutrition and health claims,
- addition of vitamins and minerals and other substances to foods
- food information
- food supplements
- novel foods.

The majority of 'sports' products including protein powders and drinks are now regulated as 'normal' foods. Until recently, sports foods were classified as 'foods intended for particular nutritional uses' if they complied with the provisions of the Foods for Particular Nutritional Uses legislation (Directive 2009/39/EC). Regulation (EU) No. 609/2013 on foods for specific groups came into force on 20 July 2016: it abolishes the concept of food intended for particular uses and repealed Directive 2009/39/EC. It replaced the Directive with a framework covering only foods for certain vulnerable groups of consumers for which specific composition and information rules were justified. ■

Full article can be seen at:
campdenbri.co.uk/blogs/regulatory-sports-foods.php

Related training course

Nutrition and health claims

www.campdenbri.co.uk/training/health-claims

If you are involved with the design or marketing of health or sports products and need help to ensure your products comply with food labelling and nutrition and health claims legislation then you may be interested in our one day specialist nutrition and health claims course on 12 July 2018. ■

Training and events

A full list of scheduled courses is available on our website www.campdenbri.co.uk/training.php or request a brochure from training@campdenbri.co.uk +44(0)1386 842104

Seminars

Bacterial identification and typing

www.campdenbri.co.uk/bacterial-identification.php

This seminar, 1 March, will explore different approaches to separating microorganisms from each other to facilitate investigative microbiology. ■

Training and development group workshop - Campden BRI members only

www.campdenbri.co.uk/training-development-group.php

The fifth meeting of the training and development group will take place on 22 March. The meeting will provide opportunities to share and feedback on industry initiatives, hot topics, current trends and best practice. Including how to ensure staff are trained effectively and cost effectively. ■

Sugar reduction in beverages

www.campdenbri.co.uk/beverage-sugar-reduction.php

UK government will introduce the soft drink levy in April 2018, which will affect all producers and importers of soft drinks with more than five grams of added sugar per 100ml. The most challenging aspects of sugar reduction in beverages will be covered at our seminar on 27 March. ■

Date for your diary

Campden BRI Day - 6 June 2018
www.campdenbri.co.uk/campdenbri-day.php



Skills and knowledge

On the website, look out for the purple icon which gives you 10% off courses booked 2 months in advance and paid for by credit card

Training

March 2018 courses

5-9	HACCP - advanced (level 4)
6-7	An introduction to food law
6-8	Practical microbiology - advanced
7-8	Threat assessment critical control point (TACCP) - intermediate level
20-22	FSPCA preventive controls for human food
20-21	Understanding microbiology
20-22	Food processing hygiene management (course in 2 modules)

www.campdenbri.co.uk/training.php