Campden BRI
food and drink innovation

New technologies research

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New technologies help drive innovation and assure product safety and quality. Our member-funded 'new technologies' project reviews recent developments and conducts feasibility studies on promising technologies - highlighting new opportunities for members.

The next bulletin will focus on X-ray technology and its applications, including a mini case study evaluating a new online 3D computed tomography scanner and its potential for application within the food and drink industry. We're currently assessing this technology's capabilities with foreign body detection and quality control testing. You can find the latest edition by searching 'new technologies bulletin' at campdenbri.co.uk. Meanwhile, our feasibility study focuses on solid-state microwaves and their ability to uniformly heat products. We have installed the equipment and are conducting initial trials on ready-rolled pastry and mashed potato to assess uniformity of heating.

The 'New Technologies for Food and Drink Manufacturing' project has been running in various forms since 1990 - selected and renewed by members every three years, with its activities steered by members through the Processing, Operations and Preservation MIG. ■

We're always looking for feedback on technologies to explore or review as part of the information and feasibility trials. Submit your suggestions to newtechnologies@campdenbri.co.uk so we can investigate technologies that interest you.

Newsletter

Campden BRI 100 years with industry for industry


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www.campdenbri.co.uk

Latest blog

Rapid confirmation and identification of *Campylobacter*

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Campylobacter species are unusual. They are easily killed by cooking, disinfection and even exposure to concentrations of oxygen present in the air and yet they remain the leading cause of bacterial food poisoning in the UK. This causes major concerns for the food industry and highlights the importance of quickly identifying this organism when the threat of contamination arises.

In a recent blog, microbiology group manager Julie Archer detailed the methods we use to identify and confirm *Campylobacter* in foods. Traditional methods (e.g. culturing the organism in selective broths) are still heavily used by the industry, but it's the advanced method of 'MALDI-ToF*' that Julie describes as a rapid method of confirming and identifying this microorganism. We've validated our MALDI-ToF method to help industry quickly identify potentially contaminated food samples. ■

Contact us to discuss with our experts how our MALDI-ToF method can help you. Read the full blog at campdenbri.co.uk.

*Matrix-assisted laser desorption ionisation time of flight - a type of mass spectrometry

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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:

8th Avenue Food & Provisions - manufacture of private brand food products

BioPaxium Technologies Limited - eco-packaging solutions for ready meals

Butlers Farmhouse Cheeses Ltd - cheese producer

CGW FoodTech Ltd - food technology consultants

Işık Tarım Ürünleri San. Ve Dış. Tic. A.Ş - producer of dried fruits and nuts

Naylor Farms - cabbage grower and coleslaw manufacturer

No 1 Rosemary Water - production of single extract botanical waters

Rankin Brothers & Sons - manufacturer of stoppers and corkers

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membership@campdenbri.co.uk

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.

Are your cooking instructions correct?

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In 2018, new considerations for effective instruction validation were incorporated in BRC Global Standard for Food Safety Issue 8. By identifying the many areas where variations (in product and equipment) exist, the new standard highlights best practice and how to build greater confidence in on-pack instructions.

In a recent blog, our microwave and thermal process specialist, Greg Hooper, covered what we must consider when cooking or heating food. This includes the challenges of finding cold spots and will help you meet the requirements of BRC Issue 8. ■

Search 'blogs' at campdenbri.co.uk

Sampling for food safety - guideline published

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HACCP and good practices have been developed to 'control' hazards, and yet sampling and testing is still carried out to ensure that risk management systems are working. But how many samples should you be taking? Until now, there's been little or no user-friendly practical guidance to help those in industry answer a question like this. We have recently released Guideline 78 - 'Sampling for food safety - a practical guide'. This guideline discusses types of sampling plans, their limitations, reasons for sampling and considerations associated with practical sampling in different circumstances. It will give readers the comprehensive understanding they need to carry out their own sampling effectively. ■

Guideline 78 is available to both members and non-members. To buy a copy, visit campdenbri.co.uk/publications/pubs.php and search 'G78'.

Our experts...

...at events

A microbiologist in Beijing, 21-23 August

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Our molecular methods manager, Suzanne Jordan, was recently invited to speak at the international symposium on microbiology safety control, in Beijing. Suzanne's talk gave a run down on how instrument-based identification protocols, such as MALDI-ToF (see page 2), are enabling the industry to rapidly 'identify' and 'confirm' microbial colonies. She detailed the benefits of this technology, including how it provides same day results so that manufacturers can quickly resolve microorganism-related safety and spoilage issues.

Suzanne was invited to this event because of her extensive experience with microbial identification methods and knowledge of the MALDI-ToF Biotyper. We have this technology on-site and regularly use it to help food industry clients to confirm pathogens, verify cultures and troubleshoot their spoilage and contamination incidents. ■

Interested in how this technology can help you? Get in touch to talk about what it can do. Watch one of our experts discuss how we use our MALDI-ToF by searching 'rapid microbial identification' at campdenbri.co.uk

... on video

New packaging standard - what you need to know

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The BRC has recently launched a new packaging standard (Issue 6) with changes that bring it in line with GFSI (Global Food Safety Initiative) requirements, industry best practice and the BRC Global Standard for Food Safety Issue 8.

Our food safety management system lead, Richard Leathers, features in a video where he highlights the changes that you may need to be aware of (especially as a packaging manufacturer, technologist or buyer) and how they may affect you. ■

Turn to the centre spread of this newsletter to find out more about what's changed in this standard.

To watch the video, search 'talking head' at campdenbri.co.uk

Do you find the terminology confusing? We have specialists on hand to help you understand the clauses of this new issue. Contact us to have your BRC Issue 6 questions answered.

Feature

What's new? BRC Global Standard for Packaging - Issue 6

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The BRC Global Standard for Packaging and Packaging Materials was the first packaging standard to be recognised by the Global Food Safety Initiative (GFSI). Many food and drink manufacturers and retailers require certification to the standard as a pre-requisite from suppliers, so it is widely used in the UK and worldwide. Packaging suppliers are also keen to comply with the standard as it can provide a competitive advantage when securing supply contracts in the food and drink supply chain.

On 1 August the new BRC standard - Issue 6 was published. Auditing against the new standard will begin from 1 February 2020. So, if you're a manufacturer or retailer who requires certification, BRC has allowed a six-month transition period to meet its requirements.

But what changes do you need to be aware of?

To help you prepare for implementation and auditing against the new standard, here is an overview of the main changes in Issue 6.

What's new?

The most obvious change to the standard is the merging of two hygiene categories to provide just one set of requirements for all packaging manufacturers. Additionally, there are two more optional sections regarding "traded product requirements" and "pellet, flake and powder control".

The new standard focuses more on product quality and not just product safety. As a consequence, Hazard Analysis Risk Assessment (HARA) will be used more broadly, not just to assess product safety risks but also to determine quality hazards. This may result in quality control points even if the company doesn't have any critical control points.

Product security

Changes within section one highlight the importance of product security and defence systems, from raw material to finished product. It covers this with the implementation of review processes and ensuring the effectiveness of hazard and risk management systems.

New clauses

Section three of the standard is enriched with clauses. Clause 3.6 covers 'Corrective and preventative action with the intent to prevent recurrence of issues' and clause 3.8 deals with 'Product authenticity, claims and chains'. There is also more focus on cyber security, product defence, internal audits and supplier approval.

Environmental monitoring

A new clause in section four regarding environmental monitoring now requires risk-based programmes to be in place to ensure cleaning operations are effective. Position statement number P558 is available on the BRC website to support this new clause.

Product quality

You'll find in section five there is a continued emphasis on product quality. The standard increases stringency for the documentation of line clearance (the process of clearing a production line/work area) by including the roles of persons involved, areas where materials can become trapped, validation of line clearance and a sign-off section for continuing production. It also expands the requirements for testing methodologies.

Training

In section six, training requirements are extended to product defence for all staff performing tasks affecting product safety, legality and quality. This section also makes the rules of personal hygiene clearer and more detailed. ■

Meet the requirements

Are you a packaging manufacturer or auditor? If so, you can gain a comprehensive insight to the changes to BRC Issue 6 and find out what your business will have to do to comply by attending our seminar on 15 October. Search 'BRC Packaging Issue 6 Briefing' at campdenbri.co.uk to find out more.

We have a range of on-site packaging analysis and testing facilities. This allows us to investigate your packaging by conducting physical, microbiological, chemical, sensory and taint analysis. We can also advise you on legal compliance and ensure you are in the best position to comply with BRC Issue 6.

We are also exploring alternative materials as part of a new member-funded research project. The research will establish the technical challenges faced by packaging/food companies in reducing or removing single-use plastics so they can make tactical, immediate changes. Keep up to date with this project by attending our Packaging MIG meetings, visiting the website or by getting in touch.

Contact us to find out what the new packaging standard means for you and how we can help you meet the requirements.

Sensory - what is Relative Profiling?

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Relative Profiling is a comparative-descriptive sensory approach. It can be used to:

- compare prototype recipes against current recipes - e.g. for ingredient additions or reformulations
- determine the effect of a change in process or packaging on a product
- monitor changes in a product over its shelf-life compared to a start-of-life sample
- assess a product against a competitor or multiple competitors

To carry out this test a trained sensory panel evaluates one or more test samples objectively and quantitatively against a control sample focusing on a key set of attributes.

We recently assessed the difference in the sensory profile of two prototype cake bar samples, to be stored at an ambient temperature, against the current recipe (stored at a chilled temperature). The panel identified significant differences between the prototypes and the control, with one sample perceived as being most similar to the control in terms of its overall sensory profile. This enabled the client to identify the most suitable prototype for storage at ambient temperature as part of its product development cycle. ■

Member zone

to access privileged member information and services

Voting for member-funded research projects

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Your membership fees fund our research programme. Each year we put forward a range of projects for you to vote on. Electronic voting forms, along with descriptions of the research proposals, are being sent out this month to all voting contacts. If you are a voting representative for your company, please vote. If you aren't and would like to find out who is, please get in touch. ■

Also, why not attend our MIG meetings to get a better understanding of the proposed projects? Contact us to find out when and where they are.

Reduce costs through process simulation

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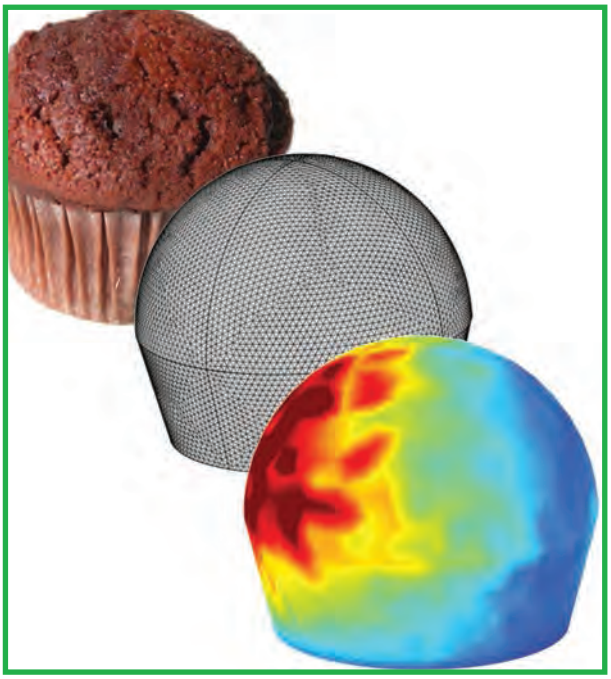
It's not surprising to find that mathematical models and simulations are increasingly being used throughout process industries to save on costly process trials. Advances in computer technology and powerful simulation software, now available at Campden BRI, enable well-established physical and food engineering models to be applied to complex real-world problems.

In this blog, process engineer Andrew Bosman discusses the advantages of mathematical modelling and simulation over traditional experimental studies - including how they can be used to focus practical trials on the most relevant aspects, saving time and money. ■

Search 'blogs' at campdenbri.co.uk



3D-printed food - what do consumers think?

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3D-printing is a technology that is attracting interest in the food industry as a way of allowing late customisation of foods and personalising nutrition. The industry will need to know how consumers perceive 3D-printed foods as this will determine the success of this emerging technology.

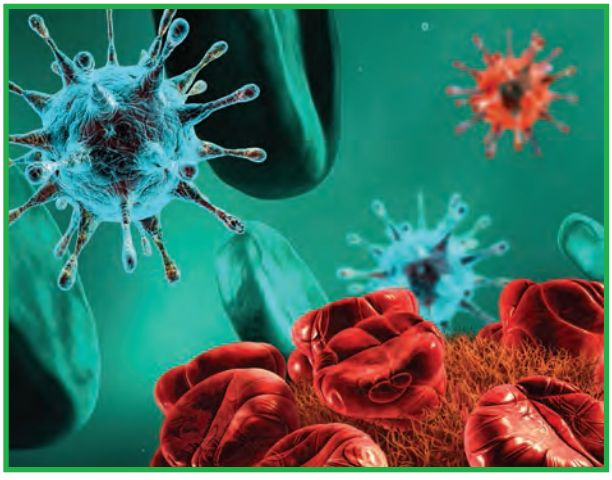
As part of a member-funded research project that is independently studying this technology, we recently conducted an online survey of over 200 participants to explore the consumers' attitudes towards 3D-printed food. We found that only a third of participants had heard about it, proving this food type's infancy and the need to explain the technology more widely. Interestingly, over 80% said they would consider eating 3D-printed food as they were intrigued by its novelty. These results give manufacturers an early insight into whether consumers would accept 3D-printed food products. ■

Interested in this technology? Further survey results will soon be published as part of an R&D report available to members. Get in touch to find out more about this research.

Latest R&D reports

www.campdenbri.co.uk/research/reports.php

- Development and consumer testing of nutritionally enhanced ready meal suitable for older adults (R&D 450)
  This research explored how older consumers responded to a nutritionally enhanced ready meal in comparison to a similar standard retailer product.
- Inclusive packaging design (R&D 451)
  Packaging can sometimes be difficult to open – especially for those with dexterity issues or impaired sight. This study investigated the ways to make packaging easier to open.
- Assessment of eight shelf-life testing regimes on cooked ready-to-eat sliced ham (R&D 452)
  This study compared different shelf-life protocols to assess the effect they had on the levels of chosen microorganisms and microflora in cooked ham.
- Functionality of novel ingredients from natural sources - focus on foaming properties (R&D 453)
  This study investigated natural foaming agents (as an alternative to chemically synthesised agents) with names that are more acceptable to consumers.
- Quality comparison between traditional thermal processing and continuous microwave technology (R&D 454)
  This new R&D report provides an insight to the potential benefits of continuous microwave processing and compares it with traditional thermal processes.
- Control of viruses in foods - persistence of target virus surrogates (R&D 455)
  This project investigated the impact of food processes and matrices on the persistence of bacteriophage as surrogates for human pathogens. ■



Domestic appliances

Fridge temperatures - the shelf-life concern

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When WRAP (Waste & Resources Action Programme) asked 329 consumers what they thought the correct fridge temperature should be, 79% said between 0°C and 5°C. This fits perfectly with the assumptions and practice of industry and it's what manufacturers consider when setting a shelf-life. When our microbiology team surveyed the actual temperature of 35 consumers' fridges over 30 days, 53% of them showed readings above 5°C.

Consumers may be aware of what fridge temperatures should be, but don't necessarily achieve these temperatures in their domestic appliances at home. As industry can't control how their products are handled by the consumer, it could mean a rethink for setting shelf-life. To help industry with this dilemma, we're about to publish new guidelines on setting the shelf-life of chilled foods. ■

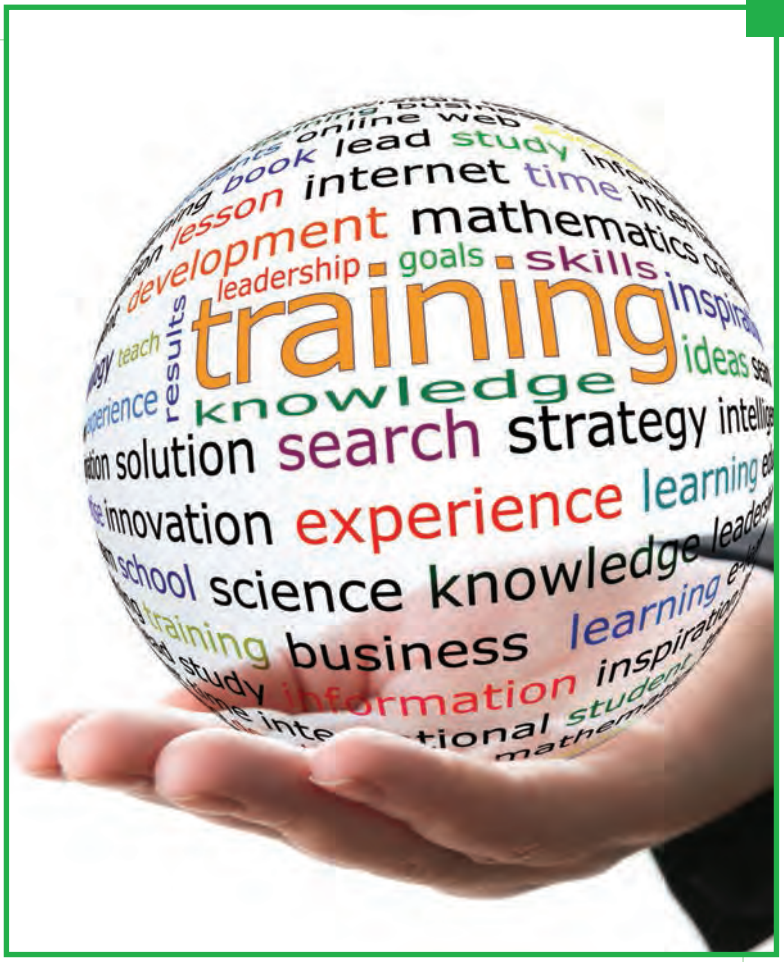
The guideline will be available later this year, but by all means get in touch now to find out more.

Microbiological shelf life testing - new approaches

www.campdenbri.co.uk/research/microbiological-shelf-life-testing.php

Training and events

A full list of scheduled courses is available on our website www.campdenbri.co.uk/training.php or you can contact us to request a brochure or discuss tailored training options: training@campdenbri.co.uk +44(0)1386 842104



Specialist food industry courses in Ireland

During November we're running four specialist one-day courses with a flexible programme that allows you to 'pick and mix' depending on your needs.

Sensory evaluation - an introduction

Thursday 7 November

Learn the principles of sensory science, the human senses, sensory methodology and best practice when conducting sensory evaluations. This course teaches you how to recruit a sensory panel and screen new assessors.

New product development

Tuesday 12 November

Improve your chances of a successful product launch by learning how to develop new ideas, screen product concepts and manage the development process.

Sugar reduction in foods

Wednesday 13 November

Address the key issues in sugar reduction, including why we should reduce sugar, alternative ingredients and the regulatory aspects.

Safe cooking: process validation

Tuesday 26 November

Assure the efficacy of your cooking process - from the microbiological requirements to method validation. ■

All four courses will be held at Radisson Blu Hotel, Dublin Airport. Contact us to find out about discounts.

October 2019 events

1	Packaging technology for non-packaging technologists
~~1-3~~	~~FSPCA preventive controls for human food~~ full
1-3	Practical microbiology - foundation
7-11	HACCP - advanced (level 4)
8-9	Understanding microbiology
9	USA food and drink labelling course
9	Current challenges and issues in the meat and poultry industry
10	Calculating meat content
15	Food and drink labelling refresher
15	BRC packaging standard issue 6 briefing
16-17	HACCP - intermediate (level 3)
~~16-17~~	~~TACCP/VACCP (food defence and food fraud) - intermediate~~ full
17	Sugar reduction in foods
17	Weights and measures
22-24	Brewing - an introduction
22-24	Thermal processing validation
23-24	Supplier quality assurance - foundation
23-24	Hot topics in food microbiology conference
25	Thermal processing - quality optimisation
29	Cooking (heating) instruction development and validation: (inc. BRC 8 compliance)