Campden BRI
food and drink innovation

Better factory hygiene: measuring microbial populations

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The powerful DNA analysis technique of advanced microbial profiling allows the environmental (microbial) loads of factories to be easily analysed in detail. This includes the presence of organisms that are difficult to culture. This extra information has the potential to deliver previously unobtainable insights into the microbial ecology of a factory.

One of our new member-funded research projects will investigate the microflora of factories making different product categories and investigate the changes in microbial populations over a year. The experiments will firstly deliver base-line data on the impact of normal factory operation on the underlying microflora. Once we've established this, predictions on the impact of changes to operations will be made and verified through further data collection. The aim is to help the industry understand how conditions and methods (e.g. surface wetness or cleaning procedures) influence microflora and how we can potentially change these factors for the better by, for example, altering the environment to discourage spoilage flora. ■

The Processing, Operations and Preservation MIG will steer this project. If you are a Campden BRI member and would like to help shape the direction of the project in its early stages, please get in touch.

Newsletter


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www.campdenbri.co.uk

Practical videos

Cleaning factories: Are you doing it right?

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Ensuring factories are cleaned and disinfected effectively is a fundamental prerequisite for the safe production of food and drink. We've recently finished a member-funded research project that updated guidance on the cleaning and disinfecting of food factories. A practical element of the project involved creating short educational videos on how to carry out key aspects of hygiene in production. The four videos cover how to:

- clean a drain
- clean for allergen control
- produce a cleaning instruction card, and
- choose the right detergent

They are now available on our website. ■

Search 'Cleaning and disinfection video' at campdenbri.co.uk to watch them in full and ensure the cleanliness of your factory.

Contact us

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

support@campdenbri.co.uk
www.campdenbri.co.uk

New members

We are delighted to welcome the following new members:

Babease Foods Ltd - manufacturer of baby food

Fixed Phage - developer of stable bacteriophages

Glanbia Cheese Ltd - cheese manufacturer

IFIS - Food & Health Information - provider of food and drink scientific information

LIC INC Ltd - manufacturer of frozen cocktails

Sipsmith Distillery - gin distiller

Tails Ltd - producer of batched cocktails

Treatt PLC - manufacturer of flavour and fragrance ingredients

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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.

IFTSA winner

Each year we sponsor a competition hosted by the US Institute of Food Technologists Students Association (IFTSA) to encourage talent in the food industry. Participants produce a short video that provides a comprehensive (and interesting) overview of their research. Judges pick a winner for a once-in-a-lifetime experience.

The 2019 winner was AJ Taylor, a PhD student at the University of Illinois, for his video on his cocoa bean fermentation research. He won a trip to Europe during which he visited Campden BRI, some of the world's most well-known chocolate companies, and research institutes while delivering presentations on his research. ■

You can read about his experience by searching 'IFTSA winner' at campdenbri.co.uk.

Microbiological challenge tests for process lethality

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Microbiological challenge testing is the process of deliberately inoculating a food or drink with a relevant microorganism(s) to determine how they are affected by an antimicrobial process. The test design is critical.

In a new white paper, microbiology group manager Rob Limburn covers the importance of 'the devil in the detail' for this type of testing, including what we do at Campden BRI to ensure a comprehensive test that represents your process. ■

Read the full blog by searching 'whitepapers' at campdenbri.co.uk

For our latest news

Search 'news' at campdenbri.co.uk

Ambassador's Q&A: Gary Tucker

To further improve our engagement with members and understand their needs, four of our senior members of staff have been assigned 'ambassadorial' roles, including:

- Gary Tucker, technical development ambassador
- Roy Betts, microbiology ambassador
- Derek Orford, brewing ambassador, and
- Gordon Jackson, beers, wines and spirits ambassador

Each month we'll pick the brains of one of them to find out about their new role. First up is Gary.

What will your new role allow you to do?

The ambassador role is mostly externally-facing but includes mentoring activities to upskill the next generation of technical experts. I will be able to visit more clients to discuss their technical issues related to food processing, get involved in more conferences and events to promote Campden BRI and take an active role in the member interest groups.

What are you looking forward to working on?

The emphasis on mentoring staff excites me. In my previous roles at Campden BRI, I have gained considerable knowledge in thermal processing, rheology, process simulation and, most recently, baking. A mentoring programme will allow me to transfer this knowledge to our staff.

What does the future hold for the industry?

Now that the Brexit decision looks resolved, the food industry has a better idea about the future and what it needs to do to move forwards. It's likely that this greater level of certainty will allow companies to continue developing new products and processes or increase their R&D investment. ■

Gary is our primary contact for technical development

Feature

Foodborne viruses: detection and control

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According to the World Health Organisation, every year one in 10 people succumb to a foodborne disease. The number one cause? Viruses.

Foodborne viruses are a safety challenge for a range of foods, including ready-to-eat products, fresh produce, bivalve shellfish and pork products. The three main culprits are Norovirus, Hepatitis A and Hepatitis E. However, we can help you control these viruses in your foods by:

- detecting human Norovirus GI/GII and Hepatitis A virus on fresh and frozen soft berry fruits and a range of salad vegetables - we are the only UK laboratory that has UKAS accreditation to ISO 17025:2005 for this
- tailoring guidance on foodborne viruses, the threat they pose to particular products and options for their control - including trials to validate specific approaches, and
- offering bespoke training and briefing sessions on viruses as a hazard, their control and how to handle contamination incidents

And now: environmental monitoring… for viruses?

Environmental monitoring of facilities is a well-established means of evaluating the general cleanliness of areas which are at the highest risk of pathogenic contamination. Swabbing of these areas, followed by enumeration on agar, is an effective method of detecting bacteria - but not for viruses. In fact, conventional swabbing techniques cannot detect any viruses, rendering them invisible to food business operators who use these methods. This is quite a concern considering they are the leading cause of foodborne illness.

One of our member-funded research projects has recently assessed and optimised a swabbing technique

detailed in ISO15216 that detects Norovirus and Hepatitis A virus. We've established the most effective equipment that can be used with the ISO method allowing us to successfully detect either high or low levels of these viruses from two materials commonly used in the food and catering industry: stainless steel and polypropylene.

What does this mean for you?

We offer environmental monitoring of viruses as part of our virology services. The service allows you to build a profile of potential areas liable to virus contamination and helps you develop strategies to improve your food safety management plans, providing confidence that your cleaning regimes are effective. But this isn't limited to factory process lines.

Restaurants, in particular chains, which have the same or similar layouts, can also benefit from this service. When high-risk areas have been identified and reduced (by, for example, more regular cleaning or using virus-destroying disinfectants), then these procedures can be rolled out to the other sites in that chain. This will create a safer environment to prepare food and protect customers and staff. ■

How can our virology services help you?

Get in touch to find out. If you would like to find out more about Norovirus in fresh and frozen produce, read our white paper by searching 'Norovirus' at campdenbri.co.uk

Search 'Rapid methods for hygiene deterimination' at campdenbri.co.uk to read more about the project results

Controlling viruses

Another of our member-funded research projects is currently investigating the effect of various control measures (for example, fresh produce decontamination) on human viral pathogen surrogates. It will help the food industry to develop effective control measures for viruses by assessing/validating antimicrobial treatments against these pathogens, as well as selecting the correct surrogates to validate food control measures. ■

Consumers' fridges and setting a shelf-life

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Establishing an accurate shelf-life is key to a product's success. It ensures a product maintains key sensory, chemical and microbiological characteristics.

This may be a bigger challenge than previously thought as results from our member-funded research project 'Microbiological shelf-life testing' suggest consumers' fridges run at higher temperatures than expected. Microbiologist Linda Everis (who is leading the project) commented that the assumptions we make about domestic fridges "may need a rethink". Products spend a large portion of their life with the consumer so building a solid understanding of what temperatures they may be exposed to during this time is crucial when establishing an accurate shelf-life.

We have issued new shelf-life guidance based on the research. The document - *Evaluation of microbiological shelf-life of foods (second edition) 2019* - has been extended beyond chilled foods to ambient stored foods such as sauces and pickles. The guideline covers all aspects of shelf-life, including best-before and use-by dates. ■

To purchase a copy, visit campdenbri.co.uk and search 'G46'.

Member zone

to access privileged member information and services

Campden BRI day 2020

Wednesday 3 June 2020

We are delighted to announce that Sara Mortimore, Walmart's global food safety vice president, will be the guest speaker at our 42nd Campden BRI Day.

With extensive experience in quality and food safety management, and a published co-author on the topic of food safety (particularly HACCP), Sara is sure to deliver a highly interesting Campden BRI Day lecture. ■

Make sure you don't miss it, save the date, 3 June; attendance is free. Registration will open soon.

Research programme 2020

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We've recently released our latest research programme to provide you with an insight into the 50+ projects that we are currently undertaking, including those funded by our members and collaborations with academic and industrial partners. The projects are grouped around industry needs - safety; quality and value; nutrition, health and wellbeing; sustainability, resilience and food security; and skills and knowledge.

Each project in the programme contains the contact details of the relevant project manager. So, if you come across a project that you're interested in, why not get in touch to find out how the research can help you? ■

Search 'research programme' at campdenbri.co.uk

Meet a MIG - packaging

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In the seventh of our Meet a MIG series, we focus on the Packaging Member Interest Group (MIG). This MIG´s principal interests are to address the practical issues relating to packaging, explore the interactions between packaging and food - including the use of packaging machinery - and review new packaging materials, trends and pressures.

As with all MIGs, Packaging MIG members see presentations from relevant industry speakers and steer and participate in Campden BRI research. A key part of the MIG's agenda is filled with members discussing what they consider to be the hottest topics within that MIG's sector.

Do you want to discuss, or know about, the biggest issues with experts in the industry? Or perhaps find out about the research projects' latest findings? 'Wrap up' the end of your week with us at the next MIG on Thursday 21 May. ■

Just email migs@campdenbri.co.uk and we'll add you to the group. If you can't make it, join in the conversation on our Linked-In group - email us so we can add you

New technology to ensure foreign body control

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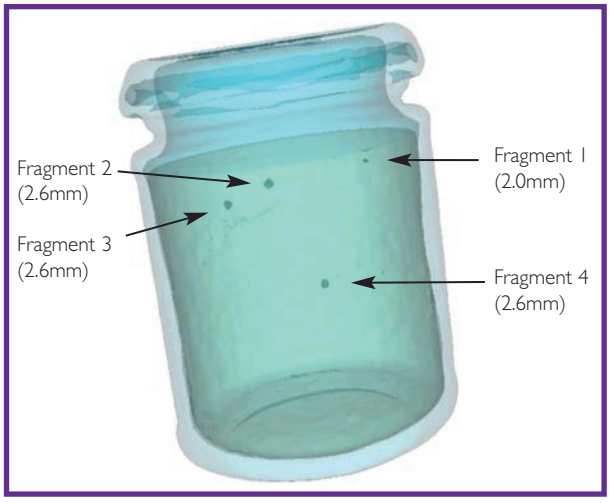
One of our member-funded research projects is investigating the potential of 3D X-ray technology to detect both quality and safety issues in a range of products.

Foreign bodies, such as glass in food or drink products, are an obvious safety concern. In this study, we used an X-ray computed tomography scanner from Biometic (Italy) to detect glass fragments in jars of mustard. We found the scanner could detect glass fragments at a range of sizes between 1.5mm and 7.2mm. Smaller glass particle sizes can be detected in other products. Members can read about the study's results in full by searching 'RSS' at campdenbri.co.uk.



How could it help you?

Commercial X-ray computed tomography systems have an auto-reject algorithm allowing a fully automated process that sorts between acceptable and contaminated products in real-time on a product line at speeds of up to 40m/min - detecting and preventing foreign bodies in food. ■

We're always looking for feedback on technologies to explore or review. Submit your suggestions to newtechnologies@campdenbri.co.uk so we can investigate technologies that interest you.

Research output

New tool to help with product formulation

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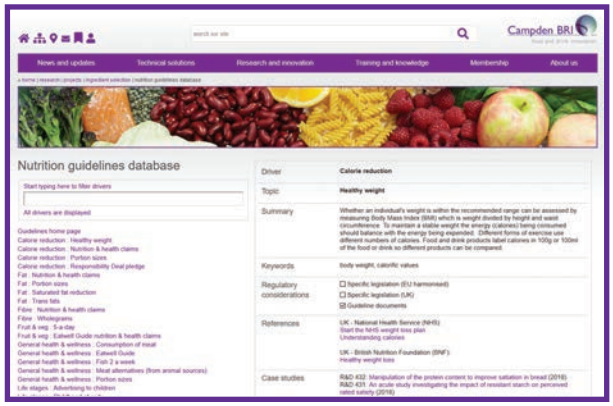
One of our member-funded research projects has led to the development of a database tool to help our members search for information on specific UK and EU harmonised nutrition and health drivers including sugar, salt, calorie reduction and gluten-free foods.

The tool will also help users find information relating to different health influencers and associated guidance and regulatory requirements. If, for example, a company wants to develop a reduced-calorie cheesecake, they will be able to use the tool to find out:

- which regulations they need to be aware of
- which ingredients they could use, and
- any guidance documents or resources available (to provide a starting point for development)

This information will be provided all in one place, allowing those undertaking existing or new product development a single resource of information, cutting the time-consuming task of finding information from numerous sources. Sound like something that could help you?



The tool is now available for our members to use on the Campden BRI website. To mark its launch, we've made it FREE until July 2020. Members can access the tool by searching 'Nutrition database' at campdenbri.co.uk. ■

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

Skills and knowledge

Training

March 2020 courses

3-4	HACCP - intermediate (level 3)
3	Raw material risk assessment
3	Microbiology measurement uncertainty: meeting the new requirements for ISO 19036
4-5	TACCP/VACCP (food defence and food fraud) - intermediate
5	Foodborne viruses: Norovirus, Hepatitis A, Hepatitis E - transmission, detection and control
16-20	Food safety - advanced (level 4)
16-20	FSSC 22000 auditor/lead auditor course
17-18	HACCP - validation and verification
17-18	Practical microbiology - advanced
19	Cooking (heating) instruction development and validation: (inc. BRCGS 8 compliance)
19	Training and development group workshop (members only)
23-27	HACCP - advanced (level 4)
25-26	Food and drink labelling
26	Packaging technology for non-packaging technologists
30-2	Sensory evaluation workshop (IFST accredited - intermediate level)
31-3	Principles of baking

10% discount

Where you see the purple icon on our website, we offer a 10% discount on scheduled courses booked two calendar months in advance and paid for by credit card.

Seminar

Blockchain and other emerging approaches supporting food safety and risk management systems

31 March 2020

Blockchain is currently a popular buzzword in the food industry, but what exactly is it? How does it support food safety and risk management systems? And what other emerging approaches are there? This workshop will host experts on blockchain, bowtie and supply chain control systems to provide you with:

- an understanding of new food safety principles
- guidance on how to practically implement these systems, and
- the opportunity to discuss new concepts. ■

For more information, contact Sian Twinning: sian.twinning@campdenbri.co.uk or search 'training and events' at campdenbri.co.uk.