



Ongoing member-funded research is addressing the lack of information available on effective controls against important foodborne viruses associated with infection: norovirus (NoV), hepatitis A (HAV) and hepatitis E (HEV).

With around 200,000 cases per year in England and Wales, virus-related foodborne illness is becoming a major cause for concern. Our research is looking to locate gaps in current knowledge on the efficacy of controls against viruses, and establish the stability of infective foodborne viruses after exposure to control measures - focusing on NoV and HAV. As NoV is unculturable in the laboratory, we have looked into the use of surrogate viruses that will react to control measures in a similar way to NoV.

The work has looked at effects of storage temperature, pH, water activity and heat: the viruses used remained more infective if stored at chill temperature than at room temperature; pH decreased infectivity, but virus remained infective at pH 2; and the effect of reducing water activity varied depending on the humectant used, with salt maintaining virus infectivity whereas sucrose and glycerol did not.

Work is currently looking at the stability of phage in foods, its heat resistance in food systems, and comparing phage with mammalian virus to determine similarities between the responses of NoV surrogates.

[www.campdenbri.co.uk/research/viruses-in-food-production.php](http://www.campdenbri.co.uk/research/viruses-in-food-production.php)

See p6 for details of our seminar *Foodborne viruses* on 24 November, and p8 for news on our STEC accreditation

## Viruses: a big challenge

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# Working with our members

Thank you to everyone that attended our Member Interest Groups (MIGs) this year. We received a record 979 attendances from across the food and drink industry. We are delighted that so many of our members are helping to shape and drive our research and other technical activities. This included the first meeting of our newly created Nutrition and Health MIG, which has attracted significant interest.

Our autumn round of MIGs has just finished and there was some great interaction between the wide range of participants - not least through the regular sharing of industry 'hot topics'. This was complemented by presentations to help steer the member funded research, as well as high-profile external speakers briefing MIG members on topics as diverse as the technical challenges, trends and developments with enzymes in baking industry through to the debate about the agronomic and environmental impact of neonicotinoids. If you are interested in attending our MIGs next year, our 2017 dates are available on our website at [www.campdenbri.co.uk/research/paneldates.php](http://www.campdenbri.co.uk/research/paneldates.php)

Next month we will announce your voting results on which new projects will be included in our annual £2 million member funded research programme. MIGs will steer these when they start in January.

Steven Walker, Director General

## Beer pasteurisation study

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We received a grant from the Worshipful Company of Brewers, Brewers' Research and Education Fund (BREF) for a 1-year project investigating pasteurisation requirements of beer to protect against spoilage micro-organisms. The project - [The pasteurisation requirements for British beer: a comprehensive study](#) - started on 1 September 2016.

This complements recent member-funded research into microbiological stabilisation of low-alcohol beers.

## Switch channel



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## Spirits diploma

Chris Smart has recently passed his Diploma in Distilling. This is an internationally recognised qualification in the industry, and is known to be tough to pass - Chris has completed all three modules within a year, rather than the typical three year study period.

## On the podium at Food Matters Live

We have an array of talent on the podium at this year's Food Matters Live event on 22-24 November, at the ExCeL arena in London, where we will be showcasing our involvement in nutrition and health. See us on Stand 420.

Peter Burgess: [Applying sensory branding in a health and well-being context](#)

Fraser Courts: [New perspectives on the "perfect" diet](#) and [Filling up the empty calorie: a whole-diet approach](#)

Sarah Chapman: [Responding to the challenges of an ageing population](#)

Rachel Gwinn: [Assessing the developments and opportunities in novel foods and emerging ingredients](#)

David Leeks: [An overview of changes to EU regulations and their implications for food and nutrition](#)

Robyn Perry: [Panel discussion: designing for the future of health and well-being](#)

## Recent blogs on the web

[www.campdenbri.co.uk/blogs/campdenbri-blogs.php](http://www.campdenbri.co.uk/blogs/campdenbri-blogs.php)

[Meat testing - ensuring quality and safety](#)  
by Liz Mulvey

[Ergot mycotoxins](#) by Nick Byrd

## Innovation - the road to success

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A new service is available to businesses of all sizes to help them innovate. We will guide your business through the first three steps of innovation and help you implement the results.

### Is innovation beneficial?

Innovation helps to develop more effective products, processes and services, as well as generating new areas of business. There are many reasons why a business wants to innovate. External drivers include competition, lower costs, demand, economic forces, social change and demographics. Equally important are the internal drivers, which include improved product quality and improved profitability.

### What is an Innovation Road Map?

As part of our new service your business will receive a consultation and a bespoke Innovation Road Map. During the consultation we will explore the main innovation objectives for your business and work with you to understand the strengths, weaknesses, opportunities and threats facing innovation within your business.

Our service will help your business adopt a systematic and planned approach to change. The global food and drink industry is dynamic and challenging - we are your tool box for innovation.

## Research - with industry, for industry

[www.campdenbri.co.uk/research/projects.php](http://www.campdenbri.co.uk/research/projects.php)

In today's fast-moving world, no one can afford to stand still. Our extensive programme of industrially-relevant research and innovation helps ensure that we retain the cutting-edge skills, facilities, knowledge and expertise to solve your problems and support your business's development.

The core of our programme of research is funded by members, who are heavily involved in steering the projects and early discussion of results. The emphasis is on practical outcomes and industrial relevance. The research programme is organised into six strategic themes (see side panel) and a complete list of the active projects is published in our annual Research Programme. Here are a few examples of ongoing projects in three of these areas.

### Food and drink safety

In addition to the control of viruses, which is discussed on the front page, we are actively looking at new analytical methods for ensuring chemical and microbiological safety of food and drink. The inbuilt flexibility within the project allows us to provide timely responses to emerging issues as they occur. We are also looking at non-targeted screening methods, in a separate project, to help members in continued surveillance of ingredients and raw materials

in order to ensure authenticity and detect fraud incidents at an early stage.

The control of contaminants in staple foods is especially important given their major contribution to the human diet. We have a project that is helping industry to understand where chemical contaminants originate from and the route by which they contaminate food products during primary production.

### Quality and value

We have a wide range of projects under this banner. As well as our long-standing 'novel and emerging technologies' projects, we are looking at superchilling to extend product shelf-life, on-line technologies for food





process control, and 'forcing' as an accelerated approach to determine product shelf-life.

Product characterisation is particularly important when it comes to assessing quality and value. When developing new products, it is traditional to use trained sensory panels to evaluate product characteristics, but the approach is expensive.

Consumers are also used to screen concepts and assess products for liking and preference. We are evaluating and validating the many new consumer and sensory methods available in order to provide information on which ones can be used or adapted and integrated for product development work.

## Nutrition and well-being

Diet-related issues are particularly high on the agenda at the moment. Our activity in this area includes a project assessing the issues with designing food and drinks for different life stages - particularly the elderly - to enable them to maintain a healthy diet. We are also looking into the manipulation of food structure and protein content to produce satiating, energy-reduced foods and beverages, and at how packaging can be used to enhance people's enjoyment of 'healthy' products.

## Collaborative research

In order to ensure a balanced portfolio of projects, our research is divided into 6 themes:

- Safety
- Quality and value
- Nutrition, health and well-being
- Resilience and efficiency
- Environmental sustainability
- Skills and knowledge

Our Scientific and Technical Committee, made up of member representatives, decides on the overall balance of projects within the categories and then you, our members, vote for projects within each category. The proposals themselves are developed from our discussions with you, in particular from The Scientific and Technical Needs of the Food and Drink Industry - a triennial industry-consultation exercise, and through our 14 Member Interest Groups. They cover all aspects of the food and drink supply chain, from primary production and raw materials, through manufacturing and supply, and product and packaging, to consumer and brand. This helps us to ensure that the research we do is truly 'with industry, for industry'.



## Training courses

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

### Late November events

- 21-25 Food safety - advanced (level 4)
- 22-24 Biscuit science and technology
- 22 Meat technology
- 22-23 Principles of pasteurisation
- 22 USA food and drink labelling course
- 23 Calculating meat content
- 24 Foodborne viruses: Challenges and perspectives for the food industry
- 28-2 Dec HACCP - advanced (level 4)
- 29-2 Dec Better Process Control School (BPCS)
- 29-30 HACCP auditing - intermediate

### December

- 6-7 HACCP - Intermediate (level 3)
- 7-9 Practical microbiology - intermediate

## Training courses for 2017

Details of our 2017 scheduled training courses have now been published at [www.campdenbri.co.uk/training.php](http://www.campdenbri.co.uk/training.php).

Browse by date or by subject area to find the courses of relevance to you. If you need bespoke training then please give us a call. We provide a whole range of training events tailored to individual companies' needs.

## Events

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### Foodborne viruses Seminar on 24 November

[www.campdenbri.co.uk/foodborne-viruses-seminar.php](http://www.campdenbri.co.uk/foodborne-viruses-seminar.php)

This seminar will focus on the current information and challenges posed by the main foodborne viruses, namely norovirus, hepatitis A and hepatitis E. See the front page for some background discussion.

### 2017 - exhibit with us

Promote your products or services at one of our events during 2017. For the list of events where you could take exhibit space or a sponsorship package, send an email to [auto@campdenbri.co.uk](mailto:auto@campdenbri.co.uk) with the subject line: send opportunities

## Member zone

[www.campdenbri.co.uk/memberzone.php](http://www.campdenbri.co.uk/memberzone.php)

to access privileged member information and services

## Welcome to new members

We are delighted to welcome the following new members:

A E Chambers Ltd - manufacturer of cooked chilled foods, sausage, savoury pastries and pies

Brecon Foods Ltd - manufacturer of retorted baby food

Bryans Salads Ltd - grower and packer of lettuce

Dawn Farm Foods - meat processor

Food Manufacturing Group - manufacturer of a range of ingredients, sauces and jams

Giovanni Rana UK Ltd - manufacturer of fresh filled pasta and sauces

Goodman Fielder Ltd - food ingredients manufacturer

Ishida Europe Ltd - supplier of weighing, packaging and inspection systems

Pots & Co Ltd - dessert manufacturer

Sodiba - start-up brewery

Tyson Foods Inc - manufacturer of a variety of meat protein-based foods

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

## R&D tax relief

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Member companies might be eligible for tax relief on R&D projects with Campden BRI. This does depend on individual company circumstances, so check with your company's tax adviser for specific guidance.



## Tyson Foods joins Campden BRI

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Tyson Foods became the latest major international food and drink company to join Campden BRI. According to Food Engineering magazine, they are the seventh largest in the world, and this means that the top 15 food and drink companies worldwide are all members of Campden BRI.

## 100th new member



Hellofresh recently became our 100th new member of the year. The company specialises in delivering recipes and ingredients to the door to make home cooking easier. Luke Grob, Head of Product & Innovation, said:

*"We are delighted to have joined Campden BRI - their experience and knowledge in food production, food safety and legislative issues means that they are ideally placed to support us in our business."*



## STEC testing accreditation

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Our support for industry in ensuring product safety, particularly for certain raw meat and fresh produce, has been further enhanced: our Shiga toxin-producing E.coli (STEC) testing service has been accredited to the ISO/IEC 17025:2005 standard by UKAS (the United Kingdom Accreditation Service). We are one of very few facilities in the UK to have the Category 3 laboratories required for STEC testing; this enhanced level of containment is needed because STEC are highly pathogenic.

Foods at particular risk of STEC contamination include raw meat, especially raw ground beef, and seeds intended for sprouting. EU legislation requires the analysis of sprouted seeds for six STEC serotypes (O157, O145, O111, O103, O26 and O104:H4) prior to release onto the market.

The Polymerase Chain Reaction (PCR) method is sensitive enough to detect 2-40 colony forming units per 25g of sample and is absolutely specific for STEC, giving complete confidence in the results.

We now have a total of 114 UKAS accredited methods, which can be found on the UKAS website. If you think you might need STEC testing, please get in touch.



## Latest report - growth of spoilage bacilli

Most long-life pasteurised chilled foods are pasteurised for a process of 90°C/10 mins (or equivalent) to ensure safety with respect to the 'target' organism psychrotrophic *C. botulinum*. There is no guidance on the maximum shelf-life such a product may be given and there is limited guidance on other spoilage organisms or foodborne pathogens which may survive.

Recent research has evaluated the potential survival and outgrowth of a range of psychrotrophic *Bacillus* species in foods following heat treatment. The report: *Effect of heat process, pH, aw and storage temperature on the growth of spoilage bacilli* (RD411) is available on the project web page - [www.campdenbri.co.uk/research/shelf-life-chilled-foods.php](http://www.campdenbri.co.uk/research/shelf-life-chilled-foods.php)

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For other sites, see  
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