



Following the lowering of the maximum residue levels for Quaternary Ammonium Compounds* in foods, the search is underway for alternative biocides. We have launched a new service to evaluate their effectiveness in the microbial decontamination of food contact surfaces.

Evaluate effectiveness

We can simulate real-life scenarios in our microbiology process hall to test the effectiveness of biocide alternatives in the decontamination of equipment and food surfaces from pathogenic and other microorganisms.

Matrices such as food debris, fat, oil and grease can be applied to surfaces to enable decontamination in real-life scenarios to be simulated and tested - generating meaningful quantitative data. Equipment and product manufacturers can also get their equipment individually assessed with us.

Joy Gaze, Head of the Heat Resistance and Decontamination Group said, *"We can simulate conditions that are specific to a manufacturing site - from surface materials, to combinations of bacteria, even the type of food that will build up on the equipment - providing assurance and confidence that the product and the way it is applied will decontaminate effectively."*

* from 0.5 to 0.1 mg/kg

Evaluating biocides for surface decontamination

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Testing times

The analysis of food - from the raw materials and ingredients and through processing to the final end-product - is an important part of managing food safety, quality and authenticity. Results are the basis for many big decisions. One of the advantages of being a truly inter-disciplinary organisation is that we have developed a wide-ranging suite of analyses to support companies in the supply chain - from assessing ingredients' suitability for purpose, and microbiological and contaminant testing, to determining the composition and authenticity of food, foreign body analysis, packaging testing and sensory analysis. These services are underpinned by extensive method development, validation and accreditation.

We also develop new analytical test methods, and run the Campden Laboratory Accreditation Scheme and several proficiency schemes. These help you ensure that your methods and systems are appropriate, and carried out effectively and in the correct way, and that your equipment is operating adequately.

Over the next two months we will be showing how analysis and testing can help you to comply with legislation and deliver safe, high quality products to your consumers.

Steven Walker, Director General

International exchange competition

We have linked up with the US Institute of Food Technologists (IFT) to launch "The Thesis Video Challenge" - a new competition offering food technology post-graduate students worldwide the chance to win a transatlantic exchange programme. The winner of the challenge will spend 10 days with us to gain insight into the European food industry, and will have the opportunity to meet industry members and experience each of the company's divisions, focusing on the areas most relevant to their study.

Switch channel



LinkedIn - company news
www.linkedin.com/company/campden-bri



YouTube - videos for insight into the science and technology of food and drink production
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<https://twitter.com/campdenbri>



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Steven Walker appointed to Agri-Food Technology Council

Professor Steven Walker, Director General of Campden BRI has been appointed to the Agri-Food Technology Council. This industry leadership council will meet quarterly to direct and coordinate food and agriculture research and innovation.

Steven was invited to the Council by George Freeman MP (Department of Business, Innovation and Skills) and George Eustice MP (Defra), who co-chair the Council with Judith Batchelar of Sainsbury's. Steven's appointment follows the extension of the original Agri-Tech Council membership to cover the whole of the sector, from farm to supermarket shelf.

New on the web

Microbiological criteria for food and drink

Phil Voysey discusses the microbiological criteria project in a short video. See also the article on page 5
www.campdenbri.co.uk/videos.php

Food Safety Modernization Act: changing rules for food businesses exporting to the US

Blog by Steve Spice
www.campdenbri.co.uk/blogs/campdenbri-blogs.php

New member funded research projects

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

In pursuit of baked-product quality

Blog by Gary Tucker
www.campdenbri.co.uk/blogs/campdenbri-blogs.php

Sugar and energy reduction in drinks

Podcast by Rachel Gwinn
www.campdenbri.co.uk/podcasts.php

Pasteurised chilled food shelf life

Podcast by Linda Evers
www.campdenbri.co.uk/podcasts.php



New test for predicting shelf-life

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Oxidation is a common issue in the shelf-life of food and drink products. It not only affects those containing fat or oil, causing changes in taste and odour, but it can be responsible for colour changes as well. Understanding how to reduce oxidation, by adjusting formulations or altering packaging, will lead to a longer shelf life, reduced waste in production and an improved consumer experience.

Following initial trials, we have introduced a new system for testing product oxidation. Based on the Oxitest, it can analyse a wide range of products within a short time frame, which is a useful approach for the food industry. It measures the absolute pressure change inside the reaction chamber, where the initial pressure and the temperature are set at an elevated level. The instrument monitors oxygen uptake by reactive components in the sample and generates an induction period (IP) value, which shows the length of time required to reach the starting point of oxidation. The longer the IP, the higher will be the stability against oxidation.

Foodborne virus research

www.campdenbri.co.uk/research/viruses-in-food-production.php

Contact suzanne.jordan@campdenbri.co.uk to find out more

Pathogenic viruses are an emerging problem for the food industry. Although they cannot grow on or in foods, they are carried by foods. They tend to have low infective doses, and general knowledge of how they react to common microbiological controls, such as heat, sanitisers, low pH and low water activity, is quite sparse. However, ongoing research here is helping to fill some of these gaps.

Surrogate survival

Virus detection methods are based on genetic analysis; genes may remain detectable after the virus is rendered non-infective, making interpretation of inactivation data difficult. Much work is done with “surrogate” viruses. These are viruses that are considered to be similar to the foodborne viruses of concern, but differ in that they can be cultured in the laboratory, and we can therefore assess their ability to infect after treatment.

We have investigated the persistence of the bacteriophages MS2 (RNA virus) and øX174 (DNA virus) at a range of pH values in a broth system. Both viruses were capable of surviving at pH values of 3-7 for at least 60 days. Both had lower resistance to pH 2, with øX174 inactivated after 4 days and MS2 after 18 days. One of the key preservative strategies employed in

foods is acidic conditions to control microbial growth. These results indicate that MS2 and øX174 are capable of persisting at low pH under chilled conditions for at least 4 days. Another interesting point of note is that acid survival was not influenced by the acid type used.

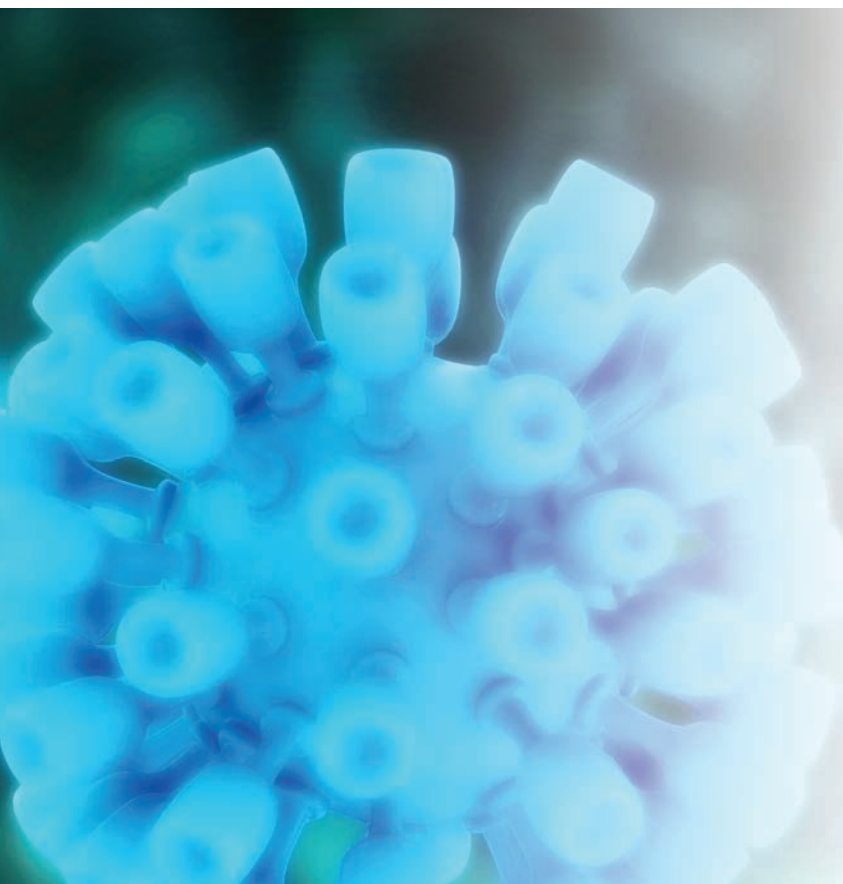
Sources of infection

A recent report from the UK Advisory Committee on the Microbiological Safety of Food suggested that the most important viruses associated with foodborne infection are norovirus, hepatitis A and hepatitis E.

Noroviruses are highly contagious and infected food handlers can spread contamination to food they handle. Transmission has also been noted via contaminated shellfish and fresh produce.

Hepatitis A incubation period can be long, in some cases up to 5 weeks. This can make tracing the source of an outbreak very difficult. Again, shellfish, fresh produce and infected food handlers have been reported to be the cause of outbreaks.

Hepatitis E is a relatively new addition to the list of food pathogens. There are increasing numbers of human cases, some of which could be linked to the consumption of



Microbiological criteria for food and drink

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A new member-funded research project will provide much-needed guidance and advice on what levels of microorganisms would be acceptable in different foodstuffs.

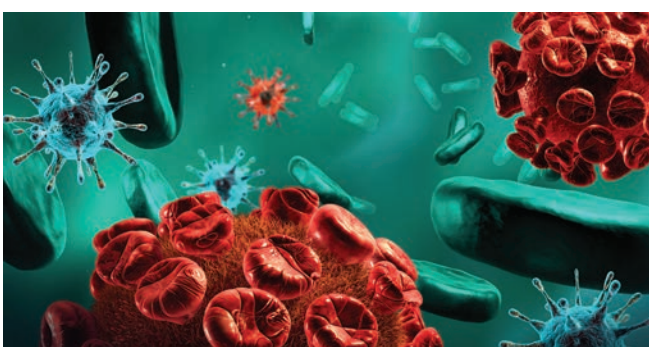
Acceptable levels of microorganisms in foods and drinks and the methods used to determine them are important aspects of any product specification. Campden BRI Guideline 52 was written to help food companies formulate a microbiological criterion. However, it does not give guidance on what microbiological criteria for different foods might look like. A small number of advisory guidance documents have been written by various bodies that suggest acceptable/unacceptable thresholds for microbiological counts in foodstuffs. These documents are extensively used throughout the food industry, but are now quite dated and most were produced before EC Regulation 2073/2005 came into being. This Regulation contains microbiological limits for various foods which are set in law, and so it is essential that what it says is taken into account.

The primary objective of the project will be to produce an up-to-date microbiological criterion guidance document, drawing together criteria from all available sources. The work will be guided and directed by a Consultative Group of interested companies - please contact us if you would like to be involved.

both raw and ready-to-eat pork products. A recent UK survey found that, of over 600 pigs tested, almost 93% were seropositive for Hepatitis E and nearly 6% carried the RNA of the virus (i.e. were infected at the time of testing). Survey work found evidence of Hepatitis E RNA in pigs' livers at the slaughterhouse, on surfaces both at processing plants and at the point of sale, and in pork sausages at the point of sale.

Practical help

These viruses are fairly resistant to a number of control measures. Some sanitisers have only a limited effect, and heat may have to be applied for some time to deliver an effective kill. We can offer practical advice on how to minimise the risk of viral contamination and on how to determine the effectiveness of such treatment. We have validated virus detection methods and are now working on establishing effective control measures.



Exporting canned foods to the USA

9-12 May 2016

training@campdenbri.co.uk +44(0)1386 842104

If you export canned or aseptically packaged food to the USA, then you need to operate with a certified supervisor on site at all times during production. We have been approved by the US GMA Science and Education Foundation to deliver its **Better Process Control School** programme to train personnel responsible for the management of canned and aseptic food production and its compliance with relevant US regulations.

It covers thermal processing, microbiological food safety, equipment, acidification and container closure evaluation for low-acid and acidified canned foods.

Training events

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

April 2016

- | | |
|-------|--|
| 11-14 | Sensory evaluation workshop |
| 12-13 | An introduction to food law |
| 12-14 | Pastry science and technology |
| 13-14 | HACCP - intermediate (level 3) |
| 18-22 | FSSC 22000 Auditor/Lead Auditor course |
| 19-21 | Brewing - an introduction |
| 19 | HACCP - foundation (level 2) |
| 19-22 | Safe production of heat preserved foods - the essentials (including principles of canning) |
| 19 | Snacks process and production |
| 20-21 | Food and drink labelling |
| 20-22 | Practical microbiology - intermediate |
| 26 | Documentation and design of quality systems |
| 26 | HACCP - refresher |
| 26 | Sensory evaluation - an introduction |
| 27 | Beer labelling |
| 27 | HACCP for craft brewers |
| 28 | Designing microbiologically stable foods |
| 28 | Safe cooking: process validation |

Seminars

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Product development for improved nutritional quality

www.campdenbri.co.uk/nutritional-quality.php

15 April at Campden BRI, Chipping Campden

The event will address:

- How reformulation to remove sugar and fat affects nutritional quality of diets
- Where the food industry can act to reduce micronutrient deficiency risk
- Options for innovation beyond modifying macronutrient provision
- Latest science linking nutritional quality to markers of human health
- How the industry can communicate the benefits

Snacks production

www.campdenbri.co.uk/snacks-process-seminar.php

19 April at the Food and Drink Expo in Birmingham

Focus on snack processing and production including: diet and health, ingredient issues, food safety aspects such as microorganism control and allergen management, and snacks technology.

Member zone

www.campdenbri.co.uk/memberzone.php

to access privileged member information and services

Campden BRI Day 2016 - 8 June

Registration for Campden BRI Day 2016 is now open. The day will feature many displays under the themes:

- Food and drink safety
- Product quality
- Nutrition and health
- Skills and knowledge

We are delighted to confirm that **Patrick Coveney - CEO Greencore Group** will present the 38th Campden Lecture.

We will also be running three short briefing updates, covering

- Foodborne viruses
- Consumer insights
- A topical international regulatory issue

Go to www.campdenbri.co.uk/campdenbri-day.php to register and find out more about the event.

Access to research findings

www.campdenbri.co.uk/research.php

Members can access R&D reports from research projects on our website. The reports provide detailed information on the research projects that we have undertaken, both those funded by members and those funded by government bodies and other public agencies.

In addition, a Research Summary Sheet is produced every year for each ongoing project, and the member-funded projects all have their own dedicated web pages .



Welcome to new members

Campden BRI is delighted to welcome the following new members who joined recently:

Alpha LSG Ltd - airline food service

Benjamin & Blum Ltd - producer of rare teas, chocolates and foie gras

Empire Bespoke Foods Ltd - importer of a variety of foods

Lamex Agrifoods - traders in food products

Lidl UK GmbH - retailer

Neal's Yard (Natural Remedies) Limited - retailer

Sauels - supplier of cooked ham

Spectrum Brands (UK) Limited Pet Care Division - pet food manufacturer

Sunstar Suisse S A - manufacturer of health foods

The Real Pork Crackling Company Limited - manufacturer of ambient pork snacks

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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.



Food additives regulatory guide

www.campdenbri.co.uk search *additives guide*

This guide explains how to check which additives are permitted in your food and drink products. It describes the procedure, and explains some of the considerations, for using the legislation to check compliance.

The determination of the category to which a food or drink product belongs is perhaps the most difficult part of the process, but is the step that the rest of the process relies on. Worked examples, using flow diagrams demonstrating the procedure, are provided to assist you through the process of determining which food additives are permitted in particular food and drink products.

Available either as print copy or by secure electronic delivery - details of which will be provided on purchase.

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Rapid screening for chemicals

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It is increasingly necessary to rapidly screen foods for their composition and even to look for 'unknown' compounds. Examples include detection of nutritional components such as vitamins, as well as contaminants (e.g. pesticides), and dealing with client issues relating to food authenticity. A recently installed Time-of-Flight mass spectrometer with Direct Sample Analysis and UHPLC sample sources has further enhanced our ability to help clients in this area.

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

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