

Newsletter

www.campdenbri.co.uk



New sensory methods for alcoholic drinks

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A new research project will look at novel ways of assessing the flavour and appearance of beers, ciders and other alcoholic beverages. The output will support product development, quality control and troubleshooting.

Alcoholic drinks have been in existence for centuries, but over the last 50 years sensory science has provided guidance and protocols to lead tastings. There are many sensory techniques available to sensory scientists, each with advantages and disadvantages depending upon the type of product being assessed and its sensory complexity. Traditionally sensory teams within breweries have focused almost exclusively on difference testing, using triangle tests, and/or relatively basic profiling often using a small number of sensory attributes to evaluate 'trueness to type'. This works reasonably well for quality assurance and control; however, in new product development, for example, where a benchmark product is not necessarily available, these techniques are not fit for purpose.

In terms of new sensory methods, beer provides particular challenges due to its inherent and often complex characteristics (e.g. assessing bitterness, linger) and limits on the volume that can be consumed during trials. These challenges make some sensory techniques very suitable and other, equally valid, techniques unworkable. This project will evaluate these techniques and assess their suitability and feasibility within a brewing environment.



Nice to see you...

Each year we welcome you, our members and clients, to our site in the Cotswolds for Campden BRI Day. It is a great chance to see the variety of skills and services you can call upon whenever you need. This year we are opening our doors on Wednesday 3 June. The day is free to attend; you just need to register on our website

www.campdenbri.co.uk/campdenbri-day.php

It's a great day with opportunities to see behind the scenes in our process plant, bakery and sensory suite, talk to many of our experts, view over 40 exhibits providing an insight into our latest activities, and network with around 500 members from across the industry. The Campden BRI Day 2015 keynote speech will be delivered by Charles Wilson, Chief Executive of Booker. If you haven't attended before, then the short video on our website will give you a flavour of the day.

Some of our specialists will be available for free short consultations with members in the afternoon. If you would like to book an appointment, simply register on our website and let us know who you'd like to talk to, or what you would like to discuss.

I look forward to welcoming you.

Steven Walker
Director General

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Latest on the website

www.campdenbri.co.uk

Nutrition, health and well-being: the importance of ingredients

Blog by Gemma Chope
www.campdenbri.co.uk/blog

Process technology in product reformulation

Podcast by Sarah Chapman
www.campdenbri.co.uk/podcasts.php

Nutrition, diet and health

Video
www.campdenbri.co.uk/services/food-diet-nutrition.php

Technology innovation, development and validation

Blog by Danny Bayliss
www.campdenbri.co.uk/blog

Microbiology process hall

Blog by Joy Gaze
www.campdenbri.co.uk/blog

Large scale coffee roaster

Video
www.campdenbri.co.uk/videos/large-scale-coffee-roasting.php





Campden BRI Day - 3 June

To register, visit www.campdenbri.co.uk/campdenbri-day.php

Campden BRI Day will be on Wednesday 3 June. The theme for the day will be '**Driving innovation**', based on the 'Innovation needs' document that we published recently (see www.campdenbri.co.uk/industry-needs.php), and will feature:

- Innovation for product safety
- Innovation for quality and value
- Innovation for nutrition and well-being

Our extensive pilot plant and sensory facilities will also be open for viewing - your toolbox for innovation.



The Annual Campden Lecture will again be a highlight. This year it is being delivered by Charles Wilson, Chief Executive of Booker.

The Sammies 2015

We recently hosted the judging of the Sammies 2015 - The British Sandwich Association Awards - for the second consecutive year.

Linda Ward, one of our specialist Home Economists, was on the judging panel and had to taste products for a range of award categories, including the New Sandwich Product of the Year award and Workplace Sandwich Provider of the Year award. The winners of the Sammies will be announced at a gala dinner on 14 May 2015.

For more information on the Sammies visit www.sandwich.org.uk/index.php/awards/the-sammies/504-the-sandwich-industry-awards-the-sammies-2015

Substantiating sensory claims

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Product differentiation in a crowded market place is difficult to achieve. One way to do it is to make a claim about the performance and/or what consumers think of your product compared to the competition. Sensory claims provide a strong basis by which to promote products and intensify consumer engagement with the product experience.

However, the test design required to substantiate such claims requires careful consideration. For example, it is important to determine at the outset the precise nature of the desired claim. Is it a comparative claim such as 'Our orange juice is preferred to brand X' or is it a non-comparative claim such as 'Our chicken jalfrezi is spicy and delicious'?

Whatever type of claim you want to make, we can work with you to develop, design and conduct tests that can be used to substantiate claims and meet industry standards.

Detecting emerging contaminants

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In response to recent industry concern about the risks to public health from the inorganic residues chlorate and perchlorate, we have developed an analytical method based on detection using sophisticated mass spectroscopy. The residues can occur in a range of foods, including dairy products, fruit, vegetables and cereal grains, and derive from diverse sources, such as natural fertilisers, chlorine based sanitisers, and even deposits from fireworks and rocket propellants!

We can detect both residues in a single analysis with a reporting limit of 0.01 mg/kg. We plan to accredit the method to ISO 17025 shortly.

Investing in your future

Our strong financial results have enabled us to invest heavily in our facilities, equipment and staff. We have invested over £3 million in capital projects over the last two years to ensure that we have the cutting-edge facilities needed to meet your needs, including over £1.5 million in new, state-of-the-art processing and analytical equipment. Below is a selection of some of the equipment we have installed over the past 12 months:



CT scanner

The quality and performance of many foods, ingredients and packaging materials relies heavily on their 3D structure. Our new x-ray micro-computed tomography (CT) scanner allows us to look at this in considerable detail, giving new insight into the microstructural properties of food and packaging.



ToF mass spectrometer

For authenticity testing, analysing product changes over time and quality benchmarking, we have purchased an Accurate Mass Quadrupole Time of Flight Gas Chromatography Mass Spectrometer. Amongst other things, it allows us to quantify trace unknown compounds in complex matrices at much lower levels and has significantly improved the efficiency and the range of services we offer through instrumental flavour analysis.

Watch the videos:
www.campdenbri.co.uk/videos/

We are delighted to announce that we have posted the biggest five year income in our company's history. Our 2010-2014 income exceeded £100 million - an increase of £40 million compared to the previous five year period - fuelling significant investment



Large scale cold plasma

Cold plasma offers potential for the disinfection of surfaces, in particular equipment, packaging, food contact surfaces or even food itself, and could extend shelf life or allow online disinfection of processing equipment to reduce cross-contamination and the establishment of biofilms.



UV-C

UV light treatment is a non-thermal, non-chemical technology to inactivate microorganisms. A new UV-tunnel allows us to run trials and explore industrial applications, including the surface decontamination of conveying lines, packaging and containers, as well as of food products such as fruits or vegetables and bakery products.



Coffee roaster

In support of our coffee science, technology and product development services we have invested in both small-scale and production-scale coffee roasters. Roasting is a key operation in

coffee processing - all the flavours and aromas of coffee are generated during the roasting process. These acquisitions back up our expertise in blending and tasting, flavour analysis and coffee technology more generally.



Flash pasteuriser and carbonator/filler

Our Armfield HTST/UHT flash pasteurisation unit is ideal if you wish to develop drinks. It can be used to flash pasteurise beverages prior to carbonating and filling using our new carbonator. The unit is suitable for a range of products, including dairy beverages, milk shakes, fruit juices and beverage syrups. It can also be used with fortified and functional beverages.

Use our pilot plant facilities to help you develop new products, analyse existing processes, and evaluate ideas for the future

Member funded research

Forcing chilled shelf-life

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With increasing pressure to develop and launch new products as quickly as possible, part of the product development cycle is to set a suitable shelf life. As 'real-time' testing is often too time consuming, there is demand for "accelerated shelf life testing" (ASL) that reliably predicts the actual life.

Currently no validated methods exist to perform ASL studies. For chilled food products there is a concern that the use of accelerated conditions to speed up the spoilage process, for example elevated storage temperature, could induce growth of different microorganisms to that which would occur under normal storage conditions.

However, initial results suggest that elevated temperature may be appropriate for accelerated shelf life testing of some chilled foods. We looked at the effect of elevated storage temperature on the growth of the natural microflora of cottage cheese. Samples were stored between 5 and 30°C, and tested over shelf life for pH, Aw, and various groups of microorganisms.

The main group of microflora in the cottage cheese product was lactic acid bacteria, and there was good agreement between the observed and predicted growth rate variation at the higher temperatures, suggesting that ASL would be suitable for products of this type. Work on other products is on-going.

Authenticity questionnaire - shaping analysis

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A significant response to a recent authenticity questionnaire to industry is helping tailor the work of a project looking into technologies to protect the industry from food fraud.

Not surprisingly, due to the recent issues surrounding cumin and paprika adulteration, responders ranked herb and spice authenticity as an area for focus. Rapid spectroscopic techniques such as NIR and FTIR were the main technologies of interest. Guidance on origin testing using stable isotope ratio analysis and authentication using DNA techniques is already being progressed.

www.campdenbri.co.uk/research/food-authenticity.php has links to the questionnaire and you can still respond until the end of May.



Training events

June 2015

- 3 Campden BRI Day
- 4 Rapid and conventional microbiological methods - conference
- 9-10 Factory inspections - technical issues
- 9-11 Food safety - intermediate (level 3)
- 15-19 FSSC 22000 Auditor/Lead Auditor course
- 15-16 HACCP - intermediate (level 3)
- 16-17 Food and drink labelling
- 16 Shelf life evaluation of chilled foods
- 17-18 Principles of pasteurisation
- 17 Raw material risk assessment
- 18-19 HACCP for feed - intermediate (Level 3)
- 18 Nutrition and health claims
- 22-26 Food safety - Advanced (CIEH level 4)
- 23 Marks & Spencer Management of Food Quality Code of Practice and Guidelines - Sensory Requirements training course
- 23-24 Threat Assessment Critical Control Point (TACCP) - intermediate level
- 25-26 Certified Food Scientist (CFS) preparatory course
- 29-3 July HACCP - advanced (level 4)
- 30 Organic cereals - seminar

A full list of 2015 scheduled courses is available on our website www.campdenbri.co.uk/training.php or by requesting a booklet from training@campdenbri.co.uk +44(0)1386 842104

Optimise your thermal process

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A new guideline (*Validation and optimisation of thermal processing systems: cookers, pasteurisers and sous vide systems - Guideline 74*) explains the principles of cooking and pasteurisation and outlines appropriate procedures and methods for the validation of the heat treatment.

Thermal processing is vital for food preservation, ensuring that foods are microbiologically safe and remain high in nutritional and sensory attributes.

Whatever the thermal process, the need for food manufacturers to prove the efficacy of their thermal process through validation is a common requirement. This guideline helps do just that.

Microbiological analysis - seminar and exhibition

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www.campdenbri.co.uk/rapid-methods-seminar.php

Rapid microbiological testing is becoming more prevalent in microbiology laboratories, to produce fast, reliable results to ensure that product safety is maintained. New technologies, agars and approaches for detection, enumeration and identification are constantly being developed.

Our seminar on 4 June will cover both 'rapid' and conventional techniques, and include an exhibition for delegates to see the testing and identification options currently available.

Organic cereals seminar

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www.campdenbri.co.uk/organic-cereals-seminar.php

Organic arable production is an important part of the food chain. The EU Commission has published proposals for a new regulation governing the production and sale of organic food, which is likely to have a significant impact on the sector.

The *Organic cereals* seminar on 30 June will help develop understanding of the challenges facing the sector. It will contain presentations and practical industry case studies that highlight developments, including legislative constraints.

Visit Member Zone

www.campdenbri.co.uk/memberzone.php



to access privileged member information and services



Welcome to new members

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

- Caerphilly County Borough Council - local authority
- Heather Ale Ltd - brewery trading as Williams Bros Brewing Company
- Lallemand UK Ltd - manufacturer of process aids and yeast for the brewing industry
- OptiGene - manufacturer of instrumentation for the detection of DNA and RNA
- Orkla Corporate Affairs - manufacturer of branded consumer goods for the grocery sector
- Oxford Vitality Ltd - manufacturer of dietary supplements
- R S Foods Ltd - wholesale distributor of dry rice
- Southover Food Company Ltd - manufacturer of cooked meats
- Uncle Tim - biltong manufacturer
- UV Technology Ltd - manufacturer of UV-C decontamination solutions

Clare Brett +44(0)1386 842125 membership@campdenbri.co.uk

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

Membership - key benefits

www.campdenbri.co.uk/memberzone.php

- Easy access to experts
- Member service accounts
- Networking
- Discount on most services, including training, publications and contract work
- Access to confidential member-funded research
- Keeping up to date
- Visits and venues
- Use of logo

Latest research published

The latest selection of R&D Reports demonstrates the wide range of issues we investigate on your behalf. To receive a free electronic copy of these reports, send an e-mail to auto@campdenbri.co.uk with the subject line: **send RDxxx**, where xxx is the number of the report.

Improving process control for reducing energy use in food production (R&D387)

Use of energy has been closely monitored across all manufacturing sectors in an attempt to reduce consumption. This project looked at energy needs for different thermal processes used in the food industry; this report looks specifically at thermal processing in a retort.

On-line technologies for food process control: a review (R&D388)

The need to transfer measurement and sensing technology from the laboratory or research arena into food manufacturing facilities to provide improved process control, quality and safety assurance requires robust on-line detection and sensing solutions that can be integrated into control systems for manufacturing processes. This review summarises on-line measurement technologies currently used to monitor process conditions and properties of raw materials and products.

Impact of product reformulation on microbiological stability of barbecue sauce: effect on the growth of spoilage organisms (R&D389)

Impact of product reformulation on microbiological stability of barbecue sauce: effect on the survival of pathogens (R&D390)

By removing ingredients such as salt and sugars, there is the potential to affect their microbiological stability, as these ingredients have antimicrobial properties. The aim of these studies was to evaluate the stability of reformulated sauce products.



Join us on LinkedIn

<http://bit.ly/campdenBRI-linkedin>

A significant number of Campden BRI staff have LinkedIn accounts. If you'd like to link up with a specialist expert here, next time you're logged in to LinkedIn why not see who has an account and send them an invitation to join your professional network.

You can also keep up to date with what's going on by following our company page:

- Up-to-date company news
- Events and publications
- New facilities and services
- See how you're connected to employees

Practical application
of technical
excellence for the
food and drink supply
chain

Social media



Facebook - find out more about our history and our lighter side www.facebook.com/campdenbripage

Twitter - regular tweets to keep up to date with our latest news and activities <https://twitter.com/campdenbri>

YouTube - a range of videos providing an insight into the science and technology underpinning food and drink production www.youtube.com/campdenbri

LinkedIn - company updates providing our latest news www.linkedin.com/company/campden-bri

iTunes - subscribe to our podcasts

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