

# Newsletter

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



## Intelligent process and product design using new predictive tools

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A new research project voted for by members will provide data that will enable companies to make more objective decisions on how to develop products with increased shelf life, whilst ensuring product safety.

### Shelf life challenges

The food industry faces the combined challenge of extending product shelf life whilst reducing the preservation factors that control pathogens and spoilage organisms. One potential approach to achieve these goals is to develop products that use a combination of control factors. Product shelf life and stability are often evaluated using microbial predictive models, which give an indication of the impact of preservation factors and process measures on microbial survival. However, these models have a number of limitations: overestimating the potential effects of reformulation; the number and combinations of preservation factors that can be included in a single search; and the need for microbial growth to predict survival and potential for growth.

This new project will explore the use of molecular markers as novel tools that have the potential ability to enhance the prediction process using a holistic approach that is capable of evaluating multiple factors simultaneously. These unique tools will enable industry to determine the potential lethality of production processes and product composition, in an efficient and unbiased way.

Your partner for  
product development

January 2014

## Looking forward

Happy New Year and welcome to the first Campden BRI newsletter of 2014. You will see that our newsletter has doubled in size. We have found that there is so much happening that members want and need to know about that we need more space to share how our research, innovation and services can help support you and your business.

The food industry is always challenging and dynamic, but this year it will face one of the biggest changes to food labelling legislation for a generation. The sweeping, mandatory changes to product labelling required by The European Union's Food Information to Consumers (FIC) Regulation mean that almost every food and drink label will need an overhaul before the end of 2014. If you haven't done so already, I encourage you to sign up for our legislation email alerts as we'll be providing useful guidance over the coming months to help you ensure that your food labels are compliant. You can sign up at [www.campdenbri.co.uk/optin.php](http://www.campdenbri.co.uk/optin.php)

We have been supporting the food and drink industry for over 90 years. To ensure that our scientific research and technical services are targeted to the needs of industry, we carry out an extensive triennial consultation with our members to identify the future challenges for industry and understand how these can be met by the effective application of science and technology. This consultation will be happening through 2014, and we will be working in close collaboration with you, our industrial members, to identify what it is that you need from funding bodies and other providers to meet your future scientific and technical needs.

Steven Walker

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## Highlights

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### Troubleshooting taints

podcast by Susan Rogers and Debbie Parker. The ways in which taints in foods and drinks can be detected and problems with them resolved are discussed  
[www.campdenbri.co.uk/podcasts.php](http://www.campdenbri.co.uk/podcasts.php)

### Product development and the Responsibility Deal

Blog by Rachel Gwinn  
[www.campdenbri.co.uk/blogs/campdenbri-blogs.php](http://www.campdenbri.co.uk/blogs/campdenbri-blogs.php)

### Formulation for health claims

Free white paper - to receive a copy, send an e-mail to [auto@campdenbri.co.uk](mailto:auto@campdenbri.co.uk) with the subject line: send health

### Webinar on fat reduction

Free member-only webinar on fat reduction on Thursday 16 January 2014 lasts approximately 30 minutes. Joining details available from [karen.jones@campdenbri.co.uk](mailto:karen.jones@campdenbri.co.uk) +44(0)1386 842204







## New man at the top of Regulatory Affairs

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Steve Spice is our new Head of Regulatory Affairs. He joins us after 15 years at Waitrose, where he was Merchandise Legislation Manager and previously Analytical Services Manager.

Steve will lead the recently expanded Regulatory Affairs team, which is dealing with a growing demand for its legislative advice, training and consultation services. Prof. Caroline Walker, Director of our Brewing Division, commented: "Steve is joining us at a very exciting time. Regulatory affairs are at the core of our new strategy for growth and Steve will drive forward ambitious plans for sustained expansion and development across the business."

Steve brings with him over 30 years' experience of the food and drink industry gained in legislative and technical roles at Nestlé, Leon Frenkel, Cow & Gate, Qpeanuts and Sol Tenco. His expertise in food law will be invaluable as the team prepares for a challenging year ahead of the enforcement of the Food Information to Consumers (FIC) Regulation in December 2014.

Commenting on his appointment, Steve said: "I am delighted to be joining Campden BRI. My career to date working in retail and manufacturing has given me a wealth of experience of the food and drink industry, which will stand me in good stead for my new role. In particular I look forward to leading an expanding team of specialists who play a significant role in helping industry keep abreast of and comply with ongoing legislation changes."

## Countdown to FIC

With just 11 months left for companies to comply with the new EU Regulation on the Provision of Food Information to Consumers the re-run of our successful December 2013 Food labelling seminar is opportune.

For the event on 30 January we have once again assembled a team of experts to explain and discuss the significance and commercial implications of changes to labelling legislation and related initiatives. Learn the most up-to-date developments through a varied programme including presentations and Q&A sessions.

Details and registration at  
[www.campdenbri.co.uk/food-labelling-seminar.php](http://www.campdenbri.co.uk/food-labelling-seminar.php)

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## Responsible product development

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The Responsibility Deal is a government-led initiative to tap into the potential for businesses and other influential organisations to help improve public health. Many food manufacturers are signing up to specific pledges, but product reformulation is not straightforward within these constraints.

We asked Rachel Gwinn to explain the issues:

*"The Deal poses several problems for those involved with product development. One is the question of degree. When reducing salt, fat or sugar levels, for example, do you go down the route of reducing it by a significant margin, potentially allowing a nutrition claim to be made (and highlighting that the product might taste different), or is it best to reduce by a series of smaller margins (by stealth), so that changes are more easily accepted by the consumer?"*

This seems to be a fundamental decision that needs to be made. Presumably, it depends on the product and the ingredient. *"Yes, individual ingredients pose specific problems. Sugar reduction is covered under the 'calorie reduction pledge', and manufacturers have been looking at ways of reducing sugar levels in a variety of formulated products for some time. However, sugar often has a functional role in the product, not just a sweetening role. So there is no simple fix - a 'tool box' approach is often required."*

Sugar is also significant for microbiological growth control, as is salt. What problems does this pose?

*"Both challenges include compensating for changes in flavour perception, technological function and microbiological control. The many options for reducing salt include direct or partial replacers, flavour enhancers, and finding different ways of 'presenting' salt particles (hollow salt balls, fine or flaked salt), so that lower levels have the same flavour effect."*

And what about fat?

*"Fat provides many functions in food, including flavour and texture. There is much work being undertaken under the banner of fat reduction, such as the use of ingredients to mimic texture properties, and novel emulsion systems (e.g. water-oil-water and gel-in-oil emulsions)."*

## Integrated crop management for sustainable crop protection

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A recently completed member subscription-funded research project has evaluated the prospects for successful integration of conventional crop protection methods with strategies using more environmentally benign products and techniques, in order to comply with the changing legislation and meet environmental concerns.

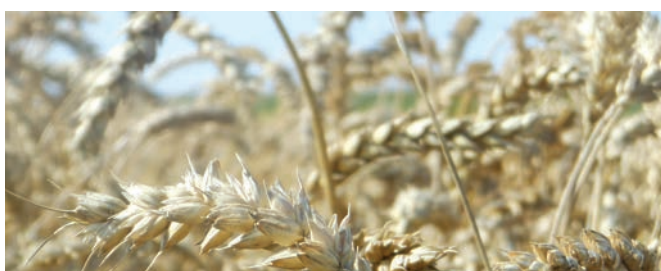
Crop production is entering an era in which pesticide availability will be more restricted.

Farmers and growers will need to adopt integrated approaches, utilising fewer pesticides to maintain yield, safety and quality of crops. The accepted thresholds for raw material quality may need to be revised to accommodate the limitations of revised crop protection techniques, which may not prevent blemishes arising from pest and disease damage. Many of these new drivers and limitations were incorporated into the latest edition of *Pesticide controls in the food chain* (Guideline 19), which was published early in 2013.

Our research has shown that replacement of traditional crop protection measures with alternative techniques will lead to different results. One particular field trial, to evaluate the efficacy of biocontrol treatments on the development of leek rust, was set up in a commercial crop of transplanted leeks in 2012. Results suggested that control was less effective using biofungicides compared to conventional products, but was better than no treatment.

In August 2013 we published a white paper on sustainable crop production in general and the reduction of pesticide use. For a free electronic copy of this, e-mail [auto@campdenbri.co.uk](mailto:auto@campdenbri.co.uk) with the subject line: **send protection**.

And you can hear project manager Richard Stanley discussing the issues involved at [www.campdenbri.co.uk/podcasts/sustainable-crop-protection.php](http://www.campdenbri.co.uk/podcasts/sustainable-crop-protection.php)



The partner of choice for the development and application of technical knowledge and commercially relevant solutions for the food and drink chain



## On the podium

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Nutrition specialist, Sarah Kuczora, will be giving a presentation "Designing Foods and Beverages for Health Claims" at the *Food Frontiers 2014* event on 3-4 February in Birmingham. She will address why it is important to consider the health claims process at the product development or reformulation stage. This will allow you to assess the feasibility and risks of making health claims submissions at minimal cost, including considering the effect of the product matrix, and processing and storage conditions on the retention and function of the active ingredient. It is important to demonstrate the importance of having well-designed clinical studies and a clear understanding of the EFSA review criteria in order to gain approval.



## Allergen precautionary labelling

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With all the impending changes in labelling legislation, it is probably worth re-assessing your allergen 'may contain' warnings. Guidance we published in August will help companies assess the level of risk of cross-contamination of their products, and take appropriate labelling action as a result. *Food allergens: practical risk analysis, testing and action levels* (Guideline 71) gives an overview of allergen management with reference to food safety management systems, and discusses the circumstances where the use of the 'Action Level' concept may be applicable.



## featured kit

### New flash pasteuriser for the pilot plant

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The acquisition of a new Armfield flash pasteuriser will enable us to expand and improve our range of pilot plant trials to meet the needs of our clients. Emma Hanby, Product Innovation Manager, commented:

*"We regularly receive enquiries for UHT/flash pasteurisation from companies wishing to develop drinks. They would like to be able to flash pasteurise their beverages and beverage syrup prior to carbonating and filling using our new carbonator. The unit is also suitable for the pasteurisation of dairy drinks. The laminar flow cabinet allows products to be filled under clean conditions, and the system will allow them to see the effect of processing on their product."*

*An advantage of a new unit is that it will further enhance our product development work and our ability to develop new product concept samples. These units are very suitable for product development trials where relatively small volumes of products (2-8 litres) are required. However, they are still capable of producing the slightly larger quantities of products required by some clients."*

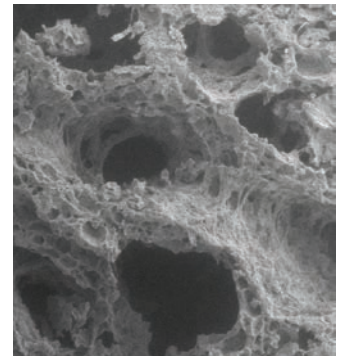
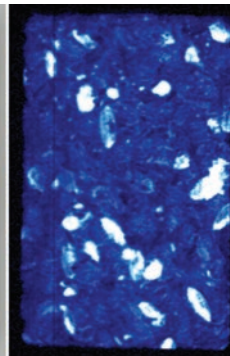
## Food imaging and measurement of texture

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Every food product has numerous quality characteristics that can be quantified and measured. Sensory attributes vary tremendously depending on the food type, as do the physical characteristics, such as texture, particle size, structure and colour. We offer instrumental methods to measure a wide range of physical product characteristics. We also have specialised facilities to study food micro-structure, used for product development and evaluation of ingredient functionality.

Spectrophotometers measure the colour of food and drink products, and a **calibrated digital imaging system** provides accurate documentation of product appearance. Further methods measure particle size distributions from centimetre to sub-micron scales. **Optical and scanning electron microscopy** provide information on food microstructure, and a range of spectroscopic imaging methods are used to map composition.

**Hyperspectral near infrared (NIR) Imaging** is particularly good for identifying the distribution of components such as moisture and fat in complex, multi-component products. Images can be taken in a few seconds, providing spectra for each pixel, which allows the required measurements to be taken.



A range of techniques are used to measure rheology and texture of liquids and solids. These include a torsional rheometer, suitable for liquids, soft and semi-soft materials. **The Rapid Viscoanalyser** enables changes in rheology during a heating cycle to be measured, and a liquid drop analysis system measures interfacial rheology, relevant to applications such as foam and emulsion stability. Many test protocols are available to measure solid food texture and the strength of packaging under a wide range of loads. An acoustic sensor provides additional information relevant to the assessment of crispness.

Practical application of technical excellence for the food and drink chain





## February events and training

A full list of 2014 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

- 3-7 HACCP - advanced
- 5-6 Food and drink labelling
- 11 HACCP - foundation
- 12-14 Practical microbiology - foundation (new)
- 24-27 Sensory evaluation workshop
- 25 Root cause analysis
- 26-27 HACCP - intermediate (workshop)
- 27-28 Understanding microbiology - foundation (new)

## Safe production of heat preserved foods - the essentials

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When it comes to training people in the theory and practical applications of heat processing, we should know what we're talking about – we've been doing it for 80 years! As relevant now as its forerunner was in the 1930s, our *Safe production of heat preserved foods* course provides delegates with a thorough understanding of the basic theory of canning technology (heat sterilisation of food in metal, plastic or glass containers). The course is suitable for those new to the industry as well as providing a refresher for more experienced personnel. Delegates typically include retort operators, process line supervisory staff, NPD technologists, factory managers, retailer technologists and factory auditors.

The course next runs on 31 March - 3 April.

We are a major training provider to food and drink businesses offering over 200 scheduled courses and events

## Livestock feed seminar

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Animal feed plays an important role in the safety and quality of food products, and is therefore very important to the food industry – as well as to the agricultural and feed sectors themselves. Feed is composed of different materials in different proportions, and includes agricultural materials, by-products of food and drink manufacture, and additives. It is formulated to suit the age and type of livestock, and production constraints will vary for different livestock sectors. With pressures on animal feed material supply likely to increase in the future, the sourcing of feed of appropriate safety and quality will become more challenging. It is important therefore to understand the issues in relation to the production of feeds and their use in livestock production.

*Safety and quality of livestock feed* on 6 March 2014 will cover aspects such as nutrition, product quality, human health and aquaculture and how services on offer to the industry can help address problems.



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

## The latest news and information for our members



Visit Member Zone to access privileged member information and services

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

## Member-funded brewing projects for 2014

For 2014 our brewing members were invited to vote on the projects they wished to see funded from their membership fees, and selected these three:

- Improved control of foam and haze in a range of drinks
- Establishing methods and guidelines on PUs, preservatives and other options to achieve microbiological stabilisation in low and zero alcohol beers
- Benchmarking energy and water use at individual steps of the brewing processes

The projects will be steered by the Brewing and Fermented Alcoholic Beverages MIG to ensure that they address the needs of members in a practical and relevant way. The projects will also be reported through our full range of communication channels – including news items, podcasts, videos, webinars, summary sheets and R&D reports - to ensure that the membership as a whole will have the opportunity to access the output as well as influence the direction of the projects.



## Member Interest Groups (MIGs) dates for 2014

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Come along to the winter meetings of one or more of our Member Interest Groups - to keep up with the latest developments and network with peers.

| Member Interest Group                       | Winter 2014 | Spring 2014 | Autumn 2014 |
|---|-------------|-------------|-------------|
| Agri-Food                                   | 5 Feb       | 28 May      | 25 Sept     |
| Brewing and Fermented Alcoholic Beverages * | 30 Jan      | 8 May       | 18 Sept     |
| Cereals, Milling and Baking                 | 13 Feb      | 14 May      | 8 Oct       |
| Chilled and Frozen Foods                    | 28 Jan      | 29 Apr      | 11 Sept     |
| Food and Drink Science                      | 21 Jan      | 30 Apr      | 10 Sept     |
| Food Service                                | 18 Feb      | 13 May      | 7 Oct       |
| Heat Preserved Foods                        | 6 Feb       | 29 May      | 30 Sept     |
| Manufacturing Technologies                  | 23 Jan      | 7 May       | 23 Sept     |
| Meat and Poultry                            | 29 Jan      | 21 May      | 17 Sept     |
| Microbiology                                | 4 Feb       | 15 May      | 24 Sept     |
| Packaging                                   | 12 Feb      | 20 May      | 2 Oct       |
| Quality and Food Safety Management          | 22 Jan      | 1 May       | 16 Sept     |
| Sensory and Consumer                        | 11 Feb      | 22 May      | 1 Oct       |

All meetings will be held at the Chipping Campden site unless otherwise indicated.

\* New MIG for 2014 to be held at the Nutfield site

## Microbial contamination of packaging

### New report from Campden BRI

In hot-fill processes, it has always been assumed that the high temperature of the food gives the package materials a sufficient heat treatment to reduce the risks from any microbial hazards potentially present. However, no guidance exists and hot-fill products are often processed to higher temperatures than necessary before filling or given a further heat treatment after filling. Research undertaken by Campden BRI investigated the reality of the situation.

For a free electronic copy of Microbial contamination on food packaging: literature review and case studies (RD357), send an e-mail to [auto@campdenbri.co.uk](mailto:auto@campdenbri.co.uk) with the subject line: **send RD357**





## Welcome to new members

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

**Bath Ales Ltd** - brewery based in Bristol

**Benburb Bramleys Ltd** - producers of fruit fillings and compotes for the baking industry

**Bowlender Ltd** - suppliers of specialist herb, spice, citrus and vegetable ingredients

**Gordon Rhodes & Son Ltd** - seasoning and dry powder blenders

**Potts Bakers Ltd** - bakery based in Barnsley

**Residual Barrier Technology Ltd** - manufacturer of disinfectants and sanitisers

**The Cake Crew Ltd** - manufacturer of cup-cakes

**The Hill Brush Company Limited** - hygiene cleaning equipment company

**Clare Brett** +44(0)1386 842125 [membership@campdenbri.co.uk](mailto: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.

## While you're here

If you have a few spare moments when you visit our Campden site and would like to make the most of the location, there are 50 great ideas on our website:

[www.campdenbri.co.uk/campdenbri/50-things-to-do-chipping-campden.php](http://www.campdenbri.co.uk/campdenbri/50-things-to-do-chipping-campden.php)

## Social media



**Facebook** - find out more about our history and our lighter side [www.facebook.com/campdenbripage](http://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](http://www.youtube.com/campdenbri)

**LinkedIn** - company updates providing our latest news [www.linkedin.com/company/campden-bri](http://www.linkedin.com/company/campden-bri)

**iTunes** - subscribe to our podcasts

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