

Sampling for hazards: a practical guide

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There is little practical guidance on sampling written specifically for practitioners in the food industry.

A Campden BRI member-funded research project will produce a guideline that describes and discusses sampling for different microbiological, chemical and physical food safety hazards that have to be managed within the food industry.

The guidance will use case studies to highlight the pitfalls to avoid when sampling in different scenarios. It will cover the common reasons for testing, acceptance sampling plans, representative sampling and how to use the data generated.

A consultative group is helping to steer the content of the guidance and a final draft of the guideline is expected by the end of the year. We will hold a dissemination seminar in spring 2019. ■

Get in touch to find out more about the project or visit www.campdenbri.co.uk/research/sampling-for-hazards.php



Newsletter





Consumer studies

Palatability of baby milk formula for infants with cow's milk protein allergy (CMPA)

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Both sensory and consumer studies have recently been conducted on specific baby milk formula called EHF's (extensively hydrolysed formula). EHF's are often given to infants with CMPA, the most common food allergy in infants in the UK.

Two whey-based and two casein-based EHF's were evaluated by trained sensory assessors, who identified clear sensory differences between the two categories of EHF's. In this project, the whey-based lactose-containing EHF's were also ranked the most palatable by healthcare professionals. In addition to better acceptance and happier infants and families, higher palatability could result in reduced wastage and healthcare costs.

Funded by Danone Nutricia Early Life Nutrition, the work was published in *Pediatric Allergy and Immunology* (<https://www.ncbi.nlm.nih.gov/pubmed/30192414>) and presented at the British Society for Allergy and Clinical Immunology Annual Meeting on 1st Oct 2018. ■

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

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New members

We are delighted to welcome the following new members:

- A & R House (BCL) Ltd - fruit waste upcycling
- Belvoir Fruit Farms Ltd - producer of fruit/herb-based syrups, cordials and water-based soft drinks
- Compagnie Fruitiere UK Limited - ripening and packing of bananas, grading and packing of pineapples
- Country Range Group - food wholesaler
- Express Contract Drying Ltd - manufacturer of spray dried ingredients
- Grupo Bimbo - R & D - global bakery organisation
- Henny and Joes Ltd - chai tea infusions
- Kruger UK Ltd - manufacturer of chocolate products
- St Peters Brewery Co Ltd Brewery - brewer of alcoholic and non-alcoholic beers
- West Berkshire Brewery - brewery and tap room
- Clare Brett +44(0)1386 842125
membership@campdenbri.co.uk

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.



New director of technology



Welcome to Chris Huscroft who has joined us as Technology Director for our Centre of Technical Excellence (CoTE). Chris has extensive industrial experience of R&D and product development in bakery and food ingredients and has held roles at CSM Bakery Solutions, British Arkady Company, Pura Foods and Procter & Gamble. He will be responsible for driving the development of technology research and services. ■

CO₂ in MA packaging

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www.campdenbri.co.uk/podcasts/co2-packaging.php

In this podcast microbiologist Roy Betts and packaging technologist Lynneric Potter discuss the role of carbon dioxide in modified atmosphere packaging (MAP) and the alternative gases that can be used. MAP uses gases to replace atmospheric air in the package. This can extend shelf life and improve quality in chilled, ambient and bakery products. Carbon dioxide has the added benefit of being antimicrobial. ■

Get in touch to find out more about atmospheric packaging

New faster and cheaper sensory method

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We have explored a new sensory descriptive profiling test that is at least 50% faster and up to 30% cheaper than other conventional descriptive profiling techniques.

The new method, Ranking Descriptive Analysis (RDA), is faster and cheaper because it requires fewer sessions for training and assessment with the sensory panel. Results from the new RDA method showed good correlation and similar results in overall product characterisation when compared with our well-established Rapid Attribute Profiling test, which is based on QDA®. RDA is ideal for samples with a limited shelf life and it's well suited for assessing a limited number of sensory attributes in smaller sample sets. ■

Get in touch to learn more about using the new method

Pesticide taint testing

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Pesticides have the potential to adversely affect the sensory quality of treated produce through taint. Although the likelihood of new pesticides causing taint is small, the consequences of any taint issues could be:

- damaged consumer confidence in fresh or processed commodities
- tarnished product or retailer brand images
- adverse effect on pesticide manufacturer's reputation and sales

Pesticide taint testing is part of a preventative regime when registering a new crop protection product.

We have over 50 years' experience of taint testing. All our taint testing activities are ORETO certified (Official Recognition of Efficiency Testing Facilities or Organisations in the United Kingdom). We can provide a comprehensive pesticide taint testing service, including:

- Advice on taint testing legal requirements
- Production of crop samples - field trials to produce crop samples. This avoids the risk of samples coming into contact with potential sources of taint during transit.
- Processing of the samples using pilot plant facilities for a range of commercial preservation techniques
- Detailed sensory taint test assessment - undertaken by a trained panel of assessors

If a taint problem does arise unexpectedly we can help you find out where the underlying problem might be. ■



More about our agriculture and raw material services

www.campdenbri.co.uk/services/agriculture-rawmaterials.php

Everything you need to know about MIGs

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

What are MIGs?

MIGs are forums - member interest groups - that help members to keep up to date with industry news and research. They are member-led and aim to inspire attendees to deliver commercial impact within their business. They do this by providing opportunities for personal growth and learning and for building peer relationships.

There are currently twelve MIGs. Some are sector based and some are discipline based. Each MIG meets three times a year to:

- bring together industry colleagues
- discuss topical industry issues
- consider the impact of new developments
- select and steer research

FAQs

What can members get out of them?

Participating in a MIG can help you and your company anticipate changes (such as the impact of forthcoming legislation), find out how other companies address issues and keep up to date with the latest developments. The MIGs also play a major role in shaping, selecting and steering our research and other activities (e.g. services, publishing, training), through discussions and feedback on presentations.

Which MIGs can I join?

Providing your company is a full member you can join any MIG - or even all of them.

Can I look at agendas/presentations/minutes from MIGs I'm not a member of?

Yes, all agendas, presentations and minutes are available in the MIG area of our website.



Can I present at a MIG?

Yes, we really welcome this. If you have a project, initiative or research you think other members would be interested to learn about, contact the MIG manager to get it on the agenda. You can also suggest ideas for discussions or offer to host a MIG.

How can I keep updated?

You can check the MIGs hub on our website or join the MIGs LinkedIn group (to join email Emma Burton). The MIGs LinkedIn group is used to share information, to network and to catch-up with other MIG members.

When are the next MIGs?

The dates for the 2019 Member Interest Groups are now available, visit www.campdenbri.co.uk/research/migs.php

Member Interest Group	Winter '19
Agri-Food	14 February
Cereals, Milling and Baking	7 February
Fermented and Alcoholic Drinks	23 January*
Food and Drink Science	15 January
Food Service	24 January*
Meat and Poultry	29 January
Microbiology	16 January
Nutrition and Health	12 February
Packaging	6 February
Processing, Operations and Preservation	31 January
Quality and Food Safety Management	17 January
Sensory and Consumer	5 February

All meetings will be held at our Chipping Campden site unless otherwise indicated - * to be held offsite - venue to be confirmed

Did you know...

- More than one person from each member company can attend each MIG
- You can send a substitute from your company to a MIG if you can't attend
- We get nearly a thousand MIG attendances each year
- You can get in touch to join a MIG, to suggest a future presentation or to find out more
- We welcome offers from members to present at or host a MIG meeting. ■



How can product benchmarking help you?

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Our highly trained benchmarking team evaluate products from an 'informed consumer' perspective using established sensory evaluation methods to help companies determine how their product compares to their competitors. We can evaluate a wide range of product types from Christmas puddings to salmon fillets. We tasted around 2,000 products last year.

Some food groups we have recently benchmarked include:

- Antioxidant- and botanical-infused confectionery and drinks
- Savoury-flavoured marshmallows
- Low sugar reformulated foods
- The use of beer and stout in fudge, nuts and meat

Our team of 'benchmarkers' continuously update their product knowledge of new, innovative foods and flavours, and upcoming trends through 'market safaris' to scout new products and regularly undergo in-depth training sessions on specific products. ■

Get in touch to find out more about how sensory product benchmarking can help your product innovation.

Member zone

to access privileged member information and services

Member funded research

R&D reports

Modelling can help optimise quality in heat preserved foods

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www.campdenbri.co.uk/research/validation-processed-foods.php

A new R&D report (RD440) provides a strategy to compare the impact of two or more thermal processes on food quality. The research used modelling of thermal processes to study process validation and optimisation methods. Numerical thermal process models can be used to better understand the impact of process conditions or product characteristics on food quality. Models can reduce the need for practical experimentation, saving time and money. The report was published as part of a member-funded project into quality validation for heat processed foods.

Shelf life extension through superchilling

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www.campdenbri.co.uk/research/shelf-life-super-chilling.php

Our research has demonstrated the potential for superchilling to extend the shelf life of chilled products without negatively impacting product quality. It showed that it is possible to extend the stored shelf life of certain products before they are released to the chilled



distribution chain and maintain their original chilled shelf life. The project also used advanced microbial profiling (AMP) to characterise the changing microflora of products as they progress through their shelf lives. The microflora of superchilled products is not static despite being kept below their minimum temperatures for growth.

The research (published in RD441) was conducted as part of a member-funded research project looking at extension of product shelf life through superchilling. ■

Research summary sheet

Advanced microbial profiling used to monitor animal husbandry and shelf life

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Research we conducted has shown that culture-based microbiology has the potential to miss significant groups of organisms that could have an impact on shelf life. Research also showed that milk flora was influenced by animal housing. The research was conducted as part of a member funded research project into enhancing shelf life. ■

Get in touch to find out more about the research or search 'research' at campdenbri.co.uk

New techniques

Harnessing new microbiology techniques

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Everything we know about the microbiology of our food is based on testing and we often make decisions based on test results. Advances in techniques can help us to find new methods, use existing methods differently and obtain results more quickly.

Quick pathogenic organism identification

Salmonella, *Listeria*, *Campylobacter* and a range of other organisms can be identified in less than an hour using MALDI ToF (matrix assisted laser desorption ionisation time of flight mass spectroscopy). Conventional techniques can take over 48 hours.

Bacterial strain differentiation

We can differentiate between strains of the same bacterial species. This can help us to determine the source of contamination. To do this we use sequencing or ribotyping which analyse bacterial DNA. Ribotyping can identify and subtype an unknown isolate in eight hours.

Complete bacteria identification

We can identify all types of bacteria in a sample at one time using advanced microbial profiling. The technique allows us to identify unculturable organisms, so the results will be much more closely related to the mixture of species in the product than if you use traditional culturing methods. We have used this technique to investigate shelf life and traceability.

Virus and STEC detection

PCR (polymerase chain reaction) can be used to detect viruses and STEC *E.coli*:

- Viruses

Viruses, such as Norovirus, Hepatitis A and Hepatitis E can be hard to detect. They can't grow in food and we can't culture or grow them in a lab. PCR recovers and detects any virus present in a food sample.

- STEC *E.coli*

Shiga Toxin Producing *E.coli* (STEC) are pathogens that are linked to raw meats, fresh produce, raw milk and dairy products. The group required a re-think in method development: we are looking for a species of bacterium that has the *capacity* to produce a toxin under certain conditions rather than just a species of bacteria or a toxin. Our PCR method can do this.

These techniques require expert interpretation and we can help. ■

Get in touch to find out more about how our microbial methods can help you.



Training and events

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

Seminars 2018

Plant-based protein ingredients and foods seminar

27 November

www.campdenbri.co.uk/plant-ingredients-seminar.php

Plant-based food and ingredients are a growing market. There are several functional and nutritional challenges related to developing plant-based protein rich ingredients and/or products. The seminar will focus on understanding the issues around developing plant-based food products and provide solutions to the challenges of using plant-based protein.

Food labelling update seminar

4 December

www.campdenbri.co.uk/food-labelling-seminar.php

Regulatory update on food labelling, focusing on some of the current key issues such as 'Brexit' and health and nutrition marketing terms and claims.

Culture Excellence

6 December

www.campdenbri.co.uk/culture-excellence-seminar.php

This event will provide an update on developments in the world of food safety and quality culture. It will include a number of core studies from manufacturing, retail and food service. ■



Skills and knowledge



Hygeia award for HACCP

www.campdenbri.co.uk/training/haccp-advanced

Congratulations to Juliette Jahaj from Sainsbury's who won the 2018 Hygeia award for HACCP. She attended our Level 4 HACCP exam and achieved the highest score this year for the qualification. ■

Training courses

December 2018

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|-------|--|
| 3-7 | HACCP - advanced (level 4) |
| 5-7 | Gluten free bakery products |
| 5-7 | Practical microbiology - intermediate |
| 10-14 | FSSC 22000 auditor/lead auditor course |
| 11-12 | HACCP - intermediate (level 3) |
| 11-12 | Food and drink labelling ■ |

www.campdenbri.co.uk/training.php