

Quality and safety of cereals

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Ensuring the quality and safety of cereals is of great importance to the relevant supply chains, as many cereal quality parameters have a direct influence on functionality and processing behaviour.

Our members demonstrated the clear need to focus on this area of work, as they voted (once again) for our 'cereal methods' project to be part of this year's programme.

For over 20 years this project has developed and maintained industry-agreed methods to measure and therefore control the quality and safety of cereal-based ingredients and products. It will continue to do this by investigating new instrumentation and test methods to assess the physical characteristics of grains and related ingredients, including their functionality. The project will also develop and evaluate methods to assess end-product quality.

The approaches it will take to achieve this include:

- investigating new tests relevant to the industry and updating existing procedures
- broadening engagement with all parts of the cereal industry
- continuing to issue the monthly 'Grain Quality and Safety Bulletin', and
- maintaining and implementing methods to assess end-use suitability against target specifications. ■

Get in touch if you have any suggestions for the project or to find out more about it

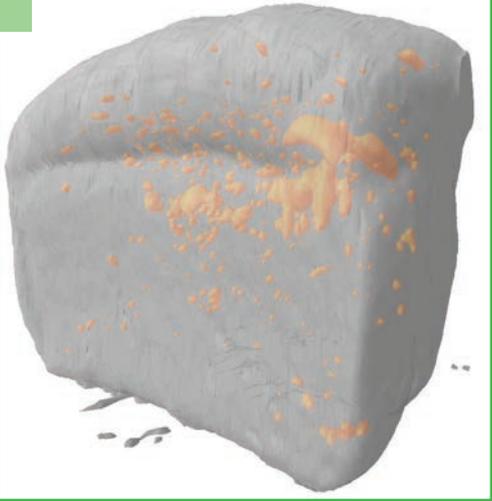


Newsletter



March 2020

www.campdenbri.co.uk



3D X-ray

New technology to detect quality

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One of our member-funded research projects is investigating the potential of 3D X-ray technology to detect both quality and safety issues in a range of products.

Bread was one such product used in the study. Holes in bread can cause problems on sandwich filling lines when mayonnaise, for example, seeps through the bread's holes and on to the conveyor belt - creating a potential hygiene issue. The X-ray computed tomography scanner can help prevent this problem. We used a scanner provided by Biometric (Italy) to create a 3D image of a bread loaf revealing areas containing large holes due to the fermentation process.

How can you apply this technology?

This CT scanner now works with an auto-reject algorithm to create a fully automated process that sorts between acceptable and low-quality products in real time on a production line. ■

Sound like research that interests you? Contact us to find out more about the project. We're always looking for feedback on technologies to explore or review. Submit your suggestions to newtechnologies@campdenbri.co.uk so we can investigate technologies that interest you.

Contact us

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

support@campdenbri.co.uk

www.campdenbri.co.uk



New members

We are delighted to welcome the following new members:

Banham Poultry (2018) Ltd - producer of frozen chicken products

Davison Canners - manufacturer of desserts, jam and fruit compotes

Invest Northern Ireland - development agency

Matthew Walker - manufacturer of puddings and cake

Santis Sarl - producer of botanicals and spices

Th Geyer Ingredients GmbH & Co KG - distributor of functional ingredients

The Basic Ingredient - food agent and broker

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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.

Experts at events

A bakery scientist on the stage 27 February

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One of our senior bakery scientists, Lucas Westphal, recently presented at the Food Industry Innovation Showcase in Sheffield. Lucas's talk provided delegates with a rundown of our projects that focused on waste valorisation - using food waste in food manufacturing. ■

He also sought out small- to medium-sized enterprises (SMEs) to collaborate on future projects. If you work for an SME and are interested, why not get in touch with him to find out how he can work with you?

Comparing products for NPD and market success

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Changing a product's recipe, process, shelf-life or packaging can be a daunting task. What impact will the change have on its sensory qualities? Will the change be significant enough for consumers to detect? It's not unusual to ask these questions, and the only way to get a definitive answer is to test it.

Sensory projects manager Amber Bradbury has put together an insightful blog that discusses the potential applications of relative profiling: a tool that compares products to help manufacturers understand how changes can impact a product's characteristics. The article features several case studies that demonstrate the diverse applications of this method. ■

Search 'Blogs' at campdenbri.co.uk to read it in full.



Listeria outbreaks: what have we learnt?

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In recent years, outbreaks of *Listeria* have acted as a stark reminder for the food industry to remain constantly vigilant for this pathogen. Understanding how outbreaks occur can help us prevent them from happening again.

Our microbiology ambassador Roy Betts has produced a new blog to help manufacturers ensure their products do not fall victim to this pathogen. He explains the origin of *Listeria*-contaminated food products and details the services we offer to help the industry eliminate the threat it causes. ■

Search 'Blogs' at campdenbri.co.uk to read it in full. Turn to page 7 to find out what Roy believes the future holds for the food industry.



Factory microflora: how does it change?

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How does the microflora of a factory fluctuate over the course of a year, or even a day? Various conditions are believed to influence microflora in a factory (even the weather!), so understanding it plays an important role in helping the food industry to deliver more effective cleaning regimes. But how do we gain this understanding?

In a recent video, microbiologist Annette Sansom answers this question as she details how she'll use powerful DNA technology to assess the change in factory microflora over time. ■

To watch the video, search 'talking head' at campdenbri.co.uk

Sensory claims: How do they influence consumers?

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What is a sensory claim?

A sensory claim is defined as 'a statement about a product that highlights its advantages, sensory or perceptual attributes, or product changes or differences compared to other products, in order to enhance its marketability'. They're commonly featured in all types of advertising media from TV to packaging and include statements such as "the UK's favourite", "Great taste" and "Creamier than ever!".

Why make a sensory claim?

In markets that are increasingly saturated and often very competitive, sensory claims can be a useful marketing tool to highlight the unique selling point of a product. Claims are thought to help consumers shape positive expectations toward a product at the point of purchase (e.g. on-pack claims) or pre-purchase (e.g. claims within TV commercials). Ultimately, the aim is to have a positive impact on consumers' purchase decisions. To that end, claims need to be perceived as meaningful, as well as relevant and credible by consumers (see page 5 for more on substantiated claims).

Sometimes sensory claims can be used as alternatives to health or nutrition claims and, while consumer studies have demonstrated the positive impact of health and nutrition claims on product choice and purchase, few have measured the impact from sensory claims.

What we found

As part of a member-funded research project, we held a series of focus groups. The goal? To assess UK consumers' awareness, understanding and perception of sensory claims.



Of the key findings from this qualitative study, two that stood out were:

- consumers tend to pay more attention to information/claims relating to nutrition, sustainability, ethical issues, 'clean label' and provenance, than to sensory claims
- the non-comparative sensory claims (e.g. 'creamy texture') appear to resonate with consumers the most, particularly when they are combined with (or when they feature alongside) an award or a recognised certification

Overall, participants were quite cynical about the use and credibility of many forms of sensory claims.

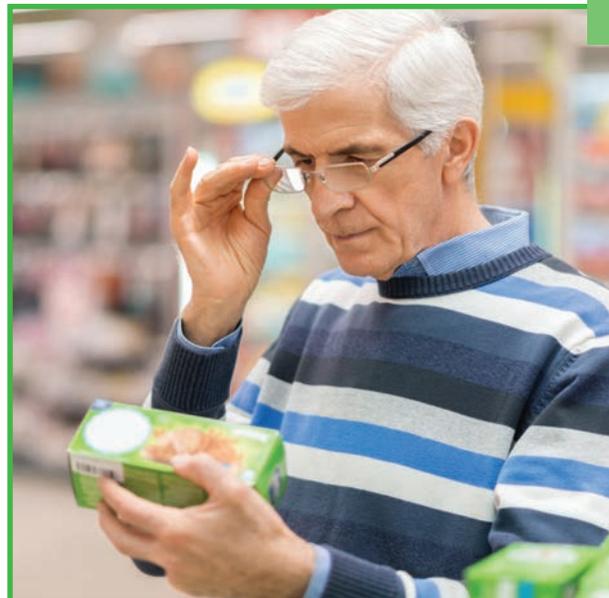
What does this mean for the industry?

Our research is providing us with a clearer picture of what influences a consumer's likelihood to purchase a product. It appears that there is no 'one-size-fits-all' when it comes to finding the right sensory claim for a product. The need for a better understanding of which claims work best for particular products prompted another consumer study. To reach a broader audience, this one was conducted online.

Online consumer study

We carried out the online study to quantify the impact of sensory claims on purchasing decisions, with participants from the UK, France and Germany. The results will help us understand the impact that cultural differences have on the effects of sensory claims. We also investigated whether the impact of these sensory claims would differ with different product categories - breakfast cereal, fruit yoghurt, orange juice and fish pie. The data is currently being analysed, however initial results show significant differences in the impact of the sensory and non-sensory product claims depending on the participants' country of origin and the product's category. ■

Members can find out the full results when they are published on the project's webpage - search 'Sensory claims' at campdenbri.co.uk. Here you can also find out more about the project including all of our key findings from our recent focus group study. How do consumers perceive your products? Are your sensory claims attracting or repelling them? Find out by getting in touch to have your product's claims substantiated by our sensory and consumer experts.



Substantiating sensory claims

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'Deliciously smooth', 'Great taste', 'Now even softer' - have you ever thought about using a sensory claim to highlight the unique selling point of your product(s)? The best claims are those which are relevant and meaningful to consumers. One of our member-funded research projects (see page 4) recently found that non-comparative sensory claims which focus on a product's key sensory or hedonic characteristics, such as 'Creamy texture', had a particularly positive impact on consumers' purchasing decisions.

However, as with any other types of claims (such as those related to nutrition), sensory claims need to be substantiated. This means that evidence should be made available, should the claim be challenged by competitors or consumers. Building on experience from both commercial and research projects, our innovation and insights team can advise you on the type of sensory claim to use and help design a consumer study that will provide robust supporting evidence.

We've put together a white paper to help the food industry understand the different types of sensory claims, including how these are regulated and substantiated in the UK. The paper also discusses the practicalities and possible issues surrounding the sensory claim substantiation process and benefits from our practical experience to provide recommendations on which claims to use. ■

The white paper is free - simply go to the 'White papers' page on our website to read it in full

Member zone

to access privileged member information and services

Hot topic highlights

There was an impressive turnout at our recent winter MIGs. We were equally delighted to see both new and returning members get involved with the hot topics sessions - members enthusiastically listed the industry-related topics that, as one MIG chair put it, "are keeping them awake at night".

So, what is the food industry currently talking about? We've grouped the hottest of topics (with specific issues) to keep you in the know:

- **Veganism** - specifically what the definition of 'vegan' is, whether it is just a trend or here to stay, and how to manage production to assure product integrity
- **Definitions** - 'clean label', 'ultra-processed', 'plant-based' - what do they all mean exactly?
- **Brexit** - what will the impact be on importing and exporting? Will there be a change to the nutritional labelling system?
- **Sustainability** - transitioning from non-recyclable plastics to recyclable plastics or non-plastic alternatives and displaying carbon footprint on packaging.

These topics are just the tip of the iceberg. Attending a MIG meeting provides you with the opportunity to network with others in the industry, and discuss your industry-related topics. So why not join us? ■

6

Get in touch with our MIGs manager Marie-Anne Nelson to find out more about the meetings and how you can attend the next round. Email marie-anne.nelson@campdenbri.co.uk and she'll add you to the group.



Latest new technologies bulletin published

Each year we monitor and evaluate new technologies that our members see as holding the greatest value and potential to help the food industry. Our findings come in the form of research and development reports or bulletins that include case studies of the new tech, a technology newsfile and a patent review.

In our recent bulletin, we focused on developments in X-ray processing for quality to detect holes in bread (see page 2), and foreign body detection for safety (see February newsletter page 7). Find out how we applied this technology and keep up to date with developments in novel and emerging technologies by reading it in full - search 'NTB 55' at campdenbri.co.uk. ■

We're always looking for feedback on technologies to explore or review. Submit your suggestions to newtechnologies@campdenbri.co.uk so we can investigate technologies that interest you.

Free with membership

There are a wide range of free alerts, updates and bulletins that come with your membership. These are in addition to your benefits of membership.

www.campdenbri.co.uk/memberzone.php

Research round up - 2019

Our research summaries provide a concise overview of developments from our member-funded research projects. These projects are selected and steered by our members to ensure they benefit the food and drinks industry.

We have published research summary sheets on:

- inulin determination by Dionex HPLC
- microbiological shelf-life testing: new approaches
- structure and texture of aerated chocolate
- extruded whole wheat flour to replace sugar in cake
- use of next generation sequencing for detection of species in processed meat
- practical control of *Listeria* in food production
- technical challenges with reducing or replacing single-use plastic packaging within the food and drink industry
- rheological characterisation of starch-based ingredients and their potential application as thickeners
- new technologies for food and drink manufacturing - Inline 3D X-ray detection for quality and foreign body control
- rapid methods for hygiene determination
- challenges of developing plant-based products
- mitigating food fraud - use of a simple plant PCR screening approach to detect adulterants in herbs and spices
- analysis of microplastics



- next generation techniques for microbiological and chemical food safety - detection of *Clostridium botulinum* toxin
- consumer acceptance of portion size reduction in cake bars using survival analysis
- effect of heat on viruses
- novel natural preservative system for use in drinks, sauces and other high a_w foods
- quality and safety of cereal-based products and ingredients for the food and brewing industry
- using butternut squash peels to improve the fibre content of tortillas ■

Find out more about our projects and summaries by searching 'MFR' or 'RSS' at campdenbri.co.uk



Ambassador's Q&A: Roy Betts

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Having appointed four of our senior staff into ambassadorial roles, we're picking the brains of one of them, each month, to reveal what they'll be getting up to in their new post. Last month we heard from Gary Tucker, our new technical development ambassador. This month it's Roy's turn.

Roy is a recognised food microbiology expert who has travelled the world as a key speaker at events. Since joining Campden BRI in 1984, he's spent a large portion of his career as the head of microbiology. As our new microbiology ambassador, what does he have to say?

What will your new role allow you to do?

I'll be able to spend more time engaging with our members and clients to deepen my understanding of their needs. In the short term, I'll be able to apply my knowledge to help them. Longer-term, I can report these needs back to our technical teams at Campden BRI, further fine-tuning our research work.

What are you looking forward to working on?

I'm really looking forward to forging closer contacts with the industry and spending far more time meeting and talking with them, gaining a greater understanding of what they find to be real issues. I'm also eager to use microbiological horizon scanning to keep them focused on possible future hazards and risks.

What does the future hold for the industry?

I think that the constant drive towards products that use novel ingredients, ingredients which are less highly-processed, clean label and those lower in salt, sugar and fat shows how the industry is moving forwards to supply consumers with healthy and nutritious food products. However, as new products reach the market, we must remain vigilant of any potential microbiological hazards that these new reformulations may bring. ■

Follow Roy's blog for the latest reflections on what really matters in food microbiology - search 'Blogs' on our website.

Training and events

A full list of scheduled courses is available on our website www.campdenbri.co.uk/training.php or you can contact us to request a brochure or discuss tailored training options: training@campdenbri.co.uk +44(0)1386 842104

Training

April 2020 courses

- 1-2 An introduction to food law
- 1-2 HACCP - intermediate (level 3)
- 20-24 HACCP - advanced (level 4) - dates also available in March
- 21-23 Food safety - intermediate (level 3)
- 22-23 Understanding microbiology
- 28 Documentation and design of quality systems
- 28-1 May Safe production of heat preserved foods - the essentials (including principles of canning)
- 30 Food additives, flavourings and enzymes: food improvement agents package

Save the date

Campden BRI Day 2020

Wednesday 3 June

Campden BRI Day 2020 is a one-day event that will allow you to explore how science and technology is being used to tackle industry needs. You will have the opportunity to network with industry peers, view scientific and technical exhibits, attend briefings, take the pilot plant tour and listen to the annual Campden Lecture given by guest speaker Sara Mortimore, Walmart's global food safety vice president. Attendance is free and the food will be great - so what's stopping you from joining us? ■

To register and to find out more about the event, search 'Campden BRI Day' at campdenbri.co.uk



Skills and knowledge

Upcoming events

Campylobacter seminar 21 April

Why is Campylobacter such a challenge to manage? And which recent outbreaks should you be aware of? Come and find out the answers, including the latest measures taken to control this pathogen. Ideal for microbiologists, food safety managers, scientific equipment and media manufacturers, hygiene teams, technical managers, retailers and food service professionals.

See website for available seminar discount
www.campdenbri.co.uk/campylobacter-seminar.php

International bakery technology conference 19 - 20 May

Attend this conference to hear about a range of bakery topics and issues including the new technologies used to reduce waste during processing and how we can use fibre to reduce calories in baked products. Anyone involved in the bakery chain will find this conference highly interesting, informative and relevant. ■

Contact Sian Twinning: sian.twinning@campdenbri.co.uk for more information or search 'training' at campdenbri.co.uk.

www.campdenbri.co.uk/training.php