

Newsletter

June 2013



Testing the quality of beer

Testing and analysis is vital in beer production to ensure that brewers meet the exacting specifications laid down by legislation and the quality standards required by consumers and retailers. This applies to materials at all stages of the process - including ingredients such as malted barley, hops and yeast, and processing aids such as filter media or finings.

Many of the analyses we have developed are specific for beer; the tests we carry out range from relatively straightforward analyses, such as colour or alcohol content, to specific methods for biological, chemical or physical contaminants.



Range of mycotoxin tests

Because of their relevance to the sector, we have developed a range of mycotoxin tests covering deoxynivalenol (DON), ochratoxin A, aflatoxins, cytochalasin E and fumonisins, for example, using liquid chromatography linked to mass spectrometry (LC-MS/MS), which allows simultaneous screening for a range of mycotoxins. We also regularly test for nitrosamine formation, pesticide residues, taint and flavor defects, processing contaminants, metals and packaging migrants.

The newly acquired LC-MS/MS system provides us with the capability to expand the analyses available for mycotoxins, agricultural contaminants, and low levels of pesticides, as well as chemical contaminants such as acrylamide and bisphenol A, effectively creating a 'one-stop-shop' for all the brewing industry's testing and analysis needs.

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Your partner for
analysis and testing





Quality

Measurement of ingredient functionality to improve product quality

Optimal quality in bakery products requires a careful balance of ingredients. All have a part to play in providing the appropriate texture and shelf life. It is therefore essential to measure the properties of flour and other ingredients to determine their impact on processing and final product quality. Such an approach can also help in better understanding the role of each ingredient, resulting in better control of processing to achieve optimum performance.

An important approach to understanding ingredient functionality has been to determine bulk and interfacial properties in dough and batter systems. Making baked goods requires a number of steps such as hydration and development of proteins, air incorporation and finally setting of the structure during baking. A single test is unlikely to reveal the functionality of an ingredient that performs a range of roles.

For example, it is known that viscosity is important for trapping air in dough and batter systems. However, bubble air/liquid interfaces also need to be stabilised to prevent their collapse and loss of air. Therefore, properties of the interfaces in such systems are crucial to maintain the integrity of the bubbles throughout the processing stages up to the point where the structure is thermally set in the oven. Research with heat-treated flour has shown that elevated levels of low-molecular-weight water-soluble proteins resulted in lower interfacial tension and more elastic interfacial films. This could explain why heat-treated flours produce lower density batters and soft eating cakes with high volume.

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Why has my product spoiled?

Two specific questions arise when assessing microbial spoilage or a failure in sterility of heat-preserved foods: what organisms are involved and how did they gain access to the food? Julie Archer explains how we go about answering them: "In order to identify the organism(s) involved, we perform incubations on a range of enrichment broths and agar media, and at a number of different temperatures. This allows us to identify conditions required for the organism to grow, and for us to culture enough to subsequently confirm its identity. Knowing this then also gives us a clear indication as to whether the problem arose from under-processing or from post-processing contamination."

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Ensuring that UK cereals meet safety standards

In work carried out for the Home Grown Cereals Authority, we assessed wheat, barley and oats destined for milling, malting or animal feed for specific chemicals: pesticides, polycyclic aromatic hydrocarbons, and heavy metals. Samples of each type of grain were collected immediately after harvest and after storage of up to six months.

The overwhelming majority of samples complied with legal and guideline limits. Ochratoxin A, although quite common in most sample types, was generally detected only at low concentrations, suggesting that mould growth and toxin synthesis were being adequately controlled by suitable storage conditions. *Fusarium* mycotoxins, produced during growth in the field, showed significant seasonal variations, though the trend of increasing prevalence observed in preceding years has not been sustained. This can probably be ascribed to a combination of climate conditions and agronomic practices.

Levels of heavy metals and pesticides were all within legal limits and did not vary substantially from season to season.

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Events and training

A list of 2013 courses is available at www.campdenbri.co.uk/training.php



July 2013

- 1-5 Food Safety - advanced (level 4)
- 2 Wine analysis and tutored faults tasting - advanced course
- 2-3 Prerequisite management - intermediate
- 3 End processing - an introduction
- 9-10 HACCP - intermediate (workshop)
- 11-12 Safe production of dried foods - conference
- 15-19 HACCP - advanced

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Analysis and testing



Lots more information at

www.campdenbri.co.uk/analysis-testing.php

Helping companies validate microbiological methods
HyServe case study: www.campdenbri.co.uk/case/validate-microbiological-methods.php

Product benchmarking
www.campdenbri.co.uk/videos/product-benchmarking-testing.php

DNA profiling of fish Podcast by Steve Garrett:
www.campdenbri.co.uk/podcasts/dna-profiling-of-fish.php

Keeping up with science and technology

We distribute a wide range of food science and technology textbooks published by renowned publishers such as Woodhead Publishing and Wiley Publishing. For a full list of the many titles available, see our website at www.campdenbri.co.uk/publications/pubs.php

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ri.co.uk/news.php

Product innovation through sensory insights

Assessing the sensory characteristics which make up your product (i.e. appearance, odour, flavour and texture) and how it compares with similar products in the marketplace, and understanding consumer attitudes/behaviour are key factors in producing a successful product. And we can help you.

Describing the taste of a food using a scientific approach that can be interpreted by others is essential in improving product quality or developing new products. Our panel of highly experienced assessors can objectively describe and quantify the sensory attributes of food and drink products: odour, flavour, texture, mouthfeel and aftertaste. Following assessment this data can be statistically analysed to quantify differences between products according to their sensory attributes. The sensory panel data can be combined with consumer preference data to determine the sensory attributes driving consumer liking using preference mapping techniques.

Our in house discrimination panel evaluates products using sensory discrimination tests to investigate the effects of changes in ingredients, packaging, process and storage on food and drinks. They can also evaluate products for suspect or potential taint issues.

Advanced sensometric techniques can be applied to obtain further detailed insights from sensory assessments.

Susan Rogers comments: "We have cutting edge sensory expertise, methods and facilities that can provide an improved understanding of your product to refine your competitive advantage. We are happy to discuss a tailored package to meet your specific needs".

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Members



This page highlights the latest news and information for our members.

Visit Member Zone to access privileged member information and services www.campdenbri.co.uk/memberzone.php

Services for the animal feed sector

www.campdenbri.co.uk/sectors/animal-feed.php

Factsheet on the control of feed safety and quality, free download available, email auto@campdenbri.co.uk, subject line: send feed

HACCP in product and feed Guideline 64
www.campdenbri.co.uk/publications/pubs.php

Join one of our member interest groups: Agriculture, Cereals, Milling and Baking, Meat and Poultry and Quality Management
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Specialist services applicable to animal feed: chemical and microbiological analysis; manufacturing hygiene; HACCP of production processes; legislation advice and information services.

Specialist training: HACCP foundation: feed and food raw materials; HACCP feed manufacturing and traceability: principles and practice



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Welcome to new members

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

DHL Supply Chain - Flight Assembly Centre - distribution hub for airline catering

Great Foods Company Ltd - manufacturer of healthy vegetarian snacks

Great Northern Sandwich Company - sandwich manufacturer

International Association for Food Protection (IAFP) - US-based food protection association

Kerrco Automation Ltd - provider of software solutions for process manufacturing

Key Food Ingredients Ltd - manufacturer of ghee butter and garlic puree

Liberation Foods C/C - importer and packer of fairtrade edible nuts

More? The Artisan Bakery - wholesale and retail bakery

Raise Bakery Ltd - cupcake bakery and delivery service

Shanghai 21 Cake Food Co Ltd - China-based bakery

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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.

On the podium this month

Food hygiene specialist **John Holah** will talk about ensuring a hygienic and safe environment in commercial kitchens and food processing applications, at a an ACO meeting at CIEH entitled "There's more to drainage than meets the eye" - 12 June in London.

Food technologist **Sarah Chapman** will be in Amsterdam on 13 June, at a Food Ingredients conference on reducing and replacing sugar and sodium. Her talk is entitled: "Investigating new approaches to aid successful development of healthy and palatable food products with reduced sodium".

Alan Campbell, packaging and manufacturing specialist, will give an overview of the European packaging market, legislation and issues arising, with particular focus on the metal packaging market at **Euro Can Tech 2013**, 26-28 June at the International Convention Centre, Birmingham.



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