



## Particle size (and shape) matters

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Physical properties of food and drink products affect their taste, texture, appearance and stability, and depend on the properties of raw materials and ingredients. Projects on particle size, both of ground materials and of particles and droplets in liquids, provide good examples of our use of state-of-the-art methods to analyse particle size and shape in product development, reformulation and quality control.

- Cereals and milling - dynamic image analysis can measure grains and seeds and, in milling, can assess flour and semolina particle size relevant to mill and end use performance.
- Emulsions - analysis of droplet sizes to select the best performing stabiliser and the optimum dosage rate to avoid separation in an oil-based emulsion.
- Product stability - detailed sub-micron particle size analysis helped an enzyme supplier demonstrate a novel commercial development to control haze in beer.

Particle geometry is relevant to properties like bulk density and flow of powders, dispersion or dissolution of soluble ingredients such as sugar, extraction from products such as tea and coffee, and stability of colloids and emulsions.

In our video Vince Clark discusses why particle shape and size matter - search "particle size" at [www.campdenbri.co.uk](http://www.campdenbri.co.uk)

# Research matters

Whilst research is important in its own right, its practical application is just as important to us as it lies at the heart of all we do. We were delighted to learn that a scientific paper that we co-authored - [Low-Water Activity Foods: Increased Concern as Vehicles of Foodborne Pathogens](#) - and which was published in the Journal of Food Protection, has been declared the journal's most downloaded journal article for an unprecedented second year.

The paper was written as part of an International Life Sciences Institute project, and the award presented at the International Association for Food Protection meeting in Tampa, Florida in July.

And talking of research, the autumn sees our annual invitation for you - our members - to select the projects you would like to see us begin work on through 2018. Voting closes on 13 October - see page 7 for details.

Steven Walker, Director General

## Expansion of heating instruction development services

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We have increased our capacity to perform trials, shortening product turnaround times and improving efficiency. This year has seen a large expansion in our instruction development capability - we have appointed new staff and invested in additional new equipment, including a range of twelve gas, electric and fan-assisted ovens, over thirty disparate microwave ovens and time-temperature data logging devices. This allows us to continue to help food companies and retailers to develop and verify their food product re-heating and cooking instructions, assuring product safety and optimum product quality.

## Switch channel



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**YouTube** - videos on the science and technology of food and drink production  
[www.youtube.com/campdenbri](http://www.youtube.com/campdenbri)



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## Innovate UK funding

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Innovate UK is the UK's innovation agency and works with people, companies and organisations to grow the UK economy through innovative science and technology. As part of Innovate UK's work they fund research projects. We have helped academics and researchers identify collaborative industrial partners and secured a number of innovate projects in the past - linking with both industry and academia. We have also worked extensively with academia partners on EPSRC and BBSRC funded projects.

Collaborator feedback suggests we have been the partner of choice for many projects because of our:

- Awareness of industry issues
- Ability to produce industrially representative sample products in our pilot plant
- Ability to identify and secure funding

## Connecting with Korea

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*Virologist Martin D'Agostino with Hwang Kyong Sook and Seong Sohyehon*

We recently hosted a visit from two South Korean delegates, attending a four day specially tailored food virology training course. They represented the National Agricultural Products Quality Management Service (NAQS), part of the Ministry of Agriculture, Food and Rural Affairs (MAFRA).

Through our new office in South Korea, part of The Korea National Food Cluster, or Foodpolis, we jointly held a technical workshop to share our knowledge and expertise with researchers and Korean food firms.



## Crecepal sausage case study

[www.campdenbri.co.uk/case-studies.php](http://www.campdenbri.co.uk/case-studies.php)

Semoulerie de Bellevue - Crecepal (part of the Panzani group) asked Campden BRI to evaluate the use of their ingredient Pepite HT in the formulation of sausages. Pepite HT is 100% hydro heated durum wheat semolina. We assessed the technical feasibility of its use in the manufacture of sausages and its sensory attributes.

Assessing the processing performance of Pepite HT during manufacture included the visual appearance of the raw sausage throughout life, texture analysis and cooking loss. A sensory assessment using the Campden BRI Sensory Quality Grading Method was also carried out.

Jean Philippe Dardar Commercial Director of Semoulerie de Bellevue, said: "Working with Campden BRI allowed us to assess feasibility alongside sensory criteria when developing potential uses for Pepite HT in sausages. Campden BRI's work was in line with our expectations and they delivered clear and understandable results".

## English wine - a sparkling success

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Over recent years the UK wine industry has gone from strength to strength, producing world leading wines. There are now commercial vineyards as far north as York and as far south as the Channel Islands covering in excess of 2000 hectares.

We have been actively involved in supporting the wine industry for many years - from helping optimise product quality to troubleshooting problems when they arise (see 'Wine stability' opposite for an example).

The unique and special nature of English and Welsh wines is reflected by the growing number of PGIs (Protected geographic indication) and PDOs (Protected denomination of origin) awarded to wine and wine growing areas to protect their reputation. We are the approved laboratory for analytical and sensory approval of PDO/PGI wines.

Two thirds of English wine production is sparkling wine. These wines are now fetching a premium on wine lists and one major pub chain has replaced champagne with a sparkling English wine option that proved more popular during a trial period. Many producers are exporting their wines as far afield as China, Japan, the USA and Australia.

### Wine production and quality

To produce sparkling wine, first, the base wine is produced; this needs to have certain flavour, colour and analytical profiles on which to build other flavours. The second stage is the secondary fermentation in bottle to produce the pressure (bubbles), then ageing on the lees (yeast cells) for a minimum of 9 months. This produces what are termed yeast autolysis characteristics. Logically the longer it is left, the more this character is obvious, but too much is not desirable, so timing is crucial.

The final stages are riddling, disgorging, adding the dosage (a sugar solution) to ensure that the flavour balance is harmonious, corking and wiring. A further period of resting is advised to ensure that the flavours are integrated. All of these stages have an impact in terms of quality, again, timing is crucial.





## Wine technical support

The UK is a relatively cool climate for growing grapes resulting in lower yields and higher prices. Consistent, high quality wines are needed to balance the higher prices point of English wines. This can only be achieved by taking a long term view.

This is where our service is most beneficial to our clients. The journey from grape to bottle is a complex one. The sensory characteristics of wine change throughout its life - some varieties/styles of wine mature or evolve in bottle, others are best consumed when the wine is fresh and young.

We work with our clients to optimise quality at point of sale through analysis, advice, consultancy and training - combining scientific analysis with experience and knowledge of the impact of wine making processes and packaging on wine quality. We can advise you on how to improve grape quality, what yeast to use, fermentation conditions how to optimise flavour and aroma, ageing and the balance between sugar and acid at bottling.

To find out more about our wine quality and troubleshooting services or for details of our wide range of other services, including analytical, consultancy and sparkling wine please get in touch or visit [www.campdenbri.co.uk/wineservices.php](http://www.campdenbri.co.uk/wineservices.php).

## Wine stability - troubleshooting

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There are three key technical areas where problems with wines can arise:

### 1. Protein stability

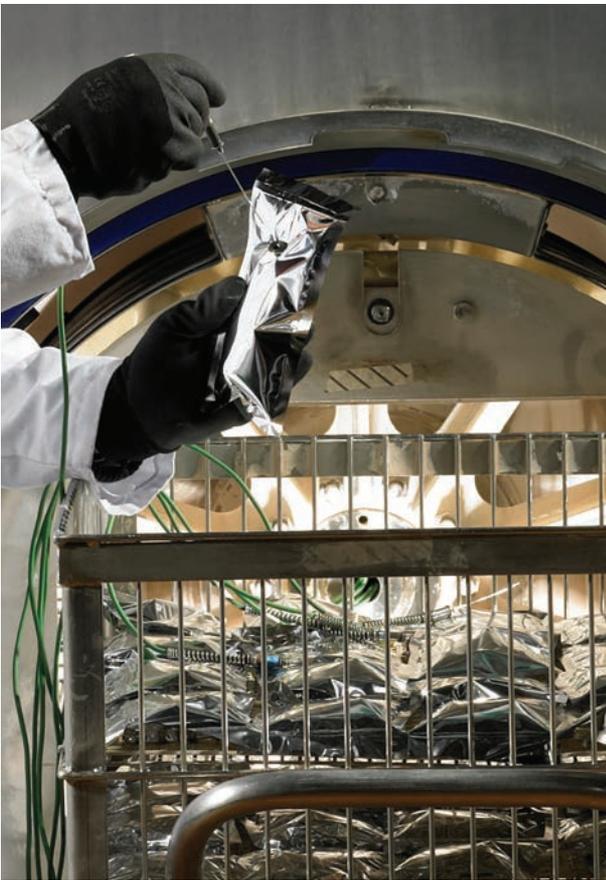
Cloudy haze in wine can be a product of unstable wine proteins. This is usually more of a problem in white wine rather than red as tannin in red wine binds with the protein. Wines with a haze are unsaleable so it's crucial to remove these proteins before bottling. There are various protein stability tests but no guaranteed test that will predict if protein haze will form in the bottle. However, there are methods for the removal of proteins

### 2. Copper

Copper in wines can come from grape treatment residues, fittings in tanks or pumps and the use of copper based products to help remove reductive odours. The legal maximum level for copper is 1mg/l, but the recommended maximum for wine stability is 0.3mg/l.

### 3. Chill stability

The result of a potentially 'chill unstable' wine is crystal formation in the bottle. Although the crystals are harmless they may render the wine unfit for sale. In UK wine the crystals are usually potassium hydrogen tartrate or calcium tartrate. Filtration is the worst offender for causing chill instability issues.



## Training events

A full list of scheduled 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

### November training courses

1-2	Internal auditing - principles and practices
2	USA food and drink labelling course
2	Pastry - practical skills
7	Food additives, flavourings and enzymes: food improvement agents package
7-9	Thermal processing validation
8-9	HACCP - intermediate (level 3)
8-9	New product development
9	Sensory evaluation - an introduction
13-17	FSSC 22000 Auditor/Lead Auditor course
14-15	An introduction to food law
14-16	Cake science and technology
14-17	Safe production of heat preserved foods - the essentials (including principles of canning)
20-24	Food safety - advanced (level 4)
21-22	Food and drink labelling
21-22	Food technology for non food technologists
22-23	Threat assessment critical control point (TACCP) - intermediate level
23	Weights and measures

## Masterclass

### Food safety management systems

[www.campdenbri.co.uk/food-safety-management.php](http://www.campdenbri.co.uk/food-safety-management.php)

26 October

Food safety management systems are undergoing a period of change, probably the biggest since the initial concept of HACCP. This masterclass will focus on the future for food safety management systems and will provide a unique opportunity to hear from recognised experts in this field.

## Seminars

### Food Safety Modernization Act seminar

[www.campdenbri.co.uk/food-safety-modernisation.php](http://www.campdenbri.co.uk/food-safety-modernisation.php)

27 October

The Food Safety Modernization Act 2011 (FSMA) is the US regulatory food safety requirement. This seminar will give attendees an opportunity to hear from FSMA specialists, consider the global impact of FSMA and obtain the latest information on the topic.

### Hepatitis E seminar

[www.campdenbri.co.uk/hepatitis-e-seminar.php](http://www.campdenbri.co.uk/hepatitis-e-seminar.php)

28 November

Hepatitis E infection is an emerging issue in the UK and elsewhere. We bring together industry experts with up-to-date information on important aspects relating to Hepatitis E virus (HEV) infection, routes of transmission, methodology and the commercial/industry perspective.

### The power of sensory branding

[www.campdenbri.co.uk/sensory-branding.php](http://www.campdenbri.co.uk/sensory-branding.php)

30 November

The senses work together to elicit memories and emotions which in turn builds strong relationships between the brand and the consumer. Focus is on the integral aspects of sensory branding, the benefits of incorporating sensory and how to adopt the process into organisations.

## Member zone

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

to access privileged member information and services

## Welcome to new members

We are delighted to welcome the following new members:

Bernard Matthews Foods Limited - poultry processors

Justegg (Chilled Foods) Ltd - suppliers of hard boiled eggs and mayonnaise

PharmaCare (Europe) Ltd Sales and Marketing Co. - health products

Kim's Food Ltd - manufacturer of ethnic food

Standart SAS - maltsters

John Robertson & Sons (Ham Curers) Ltd - processing of pigs

Fairoak Foods Ltd - manufacturer of sauces, soups and ragus

Starbucks (China) Company Limited - support centre

Praesto et Persisto SL - distributors of drinks to trade

Baker Boys Ltd - manufacturers of long life and frozen cakes

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

## Vote for what you want!

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Your membership fees fund our research programme. Each year, we put forward a range of projects for you to vote on. Electronic voting forms, along with a document describing the research proposals, have been sent out to all voting contacts. If you are a voting representative in your company, please make sure you vote. If you aren't, and would like to know who is, then please get in touch.



## What do you value most about us?

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We asked members "What do you value most about your company's membership of Campden BRI?" at our Member Interest Groups (MIGs) and Campden BRI Day.

Easy access to Campden BRI's expertise, across all sectors, was valued most. Participants also appreciated the MIGs, the ability to keep up-to-date with industry trends and the opportunity to network and converse with peers. Our newly expanded Regulatory Team was singled out for praise, and our training and events and analytical and testing service appreciated. Non-members, do not enjoy this easy access to our resources.



We also asked "What would you like us to provide that we don't already?". One common answer was a forum for greater sharing of information between MIG members. In response to this we have created a dedicated group on LinkedIn to allow members to discuss MIG content, suggest ideas for future MIGs, network and arrange social activities. To join, contact MIGs manager [harry.williams@campdenbri.co.uk](mailto:harry.williams@campdenbri.co.uk).

We always welcome feedback about your membership so if you have any please contact [clare.brett@campdenbri.co.uk](mailto:clare.brett@campdenbri.co.uk).



## The potential for small scale flour analysis

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[www.campdenbri.co.uk/research/quality-safety-cereal-ingredients.php](http://www.campdenbri.co.uk/research/quality-safety-cereal-ingredients.php)

The accuracy of prediction of water absorption and, whether measurements on small samples can predict end use performance were assessed as part of our member funded research into the quality of cereal based products and ingredients - [Assessment of Micro-doughLAB \(RD428\)](#). Dough mixing parameters from the Micro-doughLAB (4g bowl) were compared to those of the Farinograph (300g bowl). No relationship was seen between the water absorption values measured by both pieces of apparatus. However, the mixing data from the Micro-dough LAB could help discriminate between biscuit and bread wheat and there were some correlation between Micro-doughLAB parameters and end-use quality.

## Our experts at events

[www.campdenbri.co.uk/news/out-about.php](http://www.campdenbri.co.uk/news/out-about.php)

You'll often see us at conferences sharing what we do. In November we'll be at:

### Food Matters Live

21-23 November, London, UK

**Klaudyna Terlicka**, Head of Regulatory Affairs will be delivering seminars on the impact of Brexit on regulation and standards in the food and drink industry and examining the implications of Brexit for the UK food and drink supply chain.

### The Future of Nutrition Summit and the Fi Conference

27-30 November, Frankfurt, Germany

**Mike Adams**, Bakery Science Section Manager, will be talking at the Master Class: Category Innovation: Dairy, Bakery and Beverages alongside Product Development Scientist, **Rachel Gwinn**, who will also be speaking at the health and wellness session. Our **Regulatory Team** will also be presenting. You'll also be able to hear from our experts at our stand, 08.0528.

## Bread softness club

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We are inviting companies to join the bread softness club to develop better ways to create and maintain bread softness - by understanding and controlling the factors that influence bread texture. The pre-competitive research will be steered by the club of participating companies. Each member will be able to exploit the findings for their own commercial benefit. Contact us to find out more.

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For other sites, see  
[www.campdenbri.co.uk/campdenbri/contact.php](http://www.campdenbri.co.uk/campdenbri/contact.php)

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