

# Newsletter

August 2011



## Improving the quality of gluten-free bread

New research is showing how the quality of gluten-free bread can be improved by modifying dough production and processing. The eating characteristics of bread rely heavily on the gluten network that develops when wheat dough is processed, and this network is dependent on the nature and composition of wheat proteins.

However, a significant number of people suffer from coeliac disease, which is an intolerance to some of the proteins in wheat, and so there have been many attempts to produce bread from an alternative source. This can prove difficult as dough structure development traditionally relies on the interaction between the process used and properties of the flour.

### Gentle process

Using a model system based on egg white proteins, gums and stabilisers, processing conditions are being investigated that will allow the protein-hydrocolloid combination to maintain an acceptable bubble structure, and prevent the rapid bubble growth that can be a problem with this type of product. A more gentle process may result in a more acceptable and reproducible bread structure. In simple terms, the dough is processed at a lower temperature for a longer time: once the starch in the system starts to gelatinise, it can 'take over' the maintenance of the bubble structure and the temperature can be raised to achieve a final product having the desired crumb and crust properties.

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## Service...

# Microbiological methods: validation, utilisation and interpretation

*Don't use inappropriate methods, or draw the wrong conclusions from the right result!*

In any type of analysis, it is important that the method used is effective and fit for purpose - i.e. it works and answers the question that you are asking. In microbiology, there are specialised issues that need to be addressed in validating a specific method and in evaluating results from its use. We can advise clients on which methods best suit their needs - and we can also validate methods against international standards.

Microbiological methods don't always give exact answers, and understanding what results mean is of great commercial importance when deciding on a manufacturing course of action. Therefore, it is vital that appropriate methods are used and that they are shown to be suitable for a particular situation.

We can validate methods to a company's own standard, or for one of several officially recognised validation bodies, such as MicroVal, AFNOR or AOAC. Our experience in validating methods means that we are well placed to advise clients on which ones are suitable for a particular need, on their limitations, if appropriate, and in then explaining the results obtained.

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## Colin Dennis receives IFT award

Professor Colin Dennis, our former Director-General, received the **Myron Solberg Award** at the annual conference of the Institute of Food Technologists (IFT) in New Orleans recently. This award "honors an IFT member for providing leadership in the establishment and successful development and continuation of industry/government/academia cooperative organization." This initiative continues to be developed at Campden BRI.

## Roy Betts appointed to ACMSF



Dr Roy Betts, Head of the Department of Microbiology at Campden BRI, was recently appointed to the Advisory Committee on the Microbiological Safety of Food (ACMSF) by Lord Jeff Rooker, Chair of the Food Standards Agency.

With nearly 30 years' experience, Roy is recognised internationally as an expert in food microbiology and related issues. He was instrumental in the development of the research area of rapid methods, thereby giving Campden BRI an international reputation as a scientific centre of excellence within the microbiological field.

Set up in 1990, the ACMSF is a non-statutory committee that provides expert advice to Government on questions relating to microbiological issues and food. The Committee provides advice in response to requests from the Food Standards Agency and also on matters that Committee members themselves identify as important. It consists of independent experts drawn from a wide range of interests.

## Clare's tips

### Information and Library Services

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Our information team are here to help you. If you are about to start searching for information it is worth getting in touch to ask for their help. They can provide you with references and links to websites, and put you in touch with the right person when you don't know who to contact.

As well as our stock of over 8000 books we have access to many databases, general reference material and trade journals, not to mention our own R&D archives. In some cases, items can be borrowed from library stock, and photocopies or electronic versions can be supplied (subject to copyright law).

You can also visit the library. If you contact our librarian, Ann Wood, to tell her your areas of interest in advance she will help collect the reference materials for your visit.

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## Packaging and reduced waste

New member subscription-funded research is investigating whether a link exists between distribution, pack damage and food waste in the supply chain. It is suggested that damage is particularly prevalent between regional distribution centres and retail stores, and typically results from compression, dropping and crushing. By establishing where, how and why most damage occurs to food and packaging, it should be possible to identify routes to reduce food waste in the supply chain.



Three packaging formats (glass, metal and plastic) have been chosen to be followed through the supply chain, and different types of damaged packaging are being collected from supermarkets, manufacturers and retailers. With the support of several major players in the industry, damaged samples are being assessed for the types, likely causes and significance of the damage.

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## Research Summary Sheets

Keep up to date with our research by reading our Research Summary Sheets.

These 2-page synopses of research are produced on a regular basis - with at least one being scheduled for each ongoing project each year. Research Summary Sheets from 2003 to the present are available on our website at [www.campden.co.uk/research/summary.htm](http://www.campden.co.uk/research/summary.htm)

So far this year, we have issued summaries on: Food surface decontamination; Shelf-life testing protocols; Sodium reduction in baked goods; Temperature effects of bread, flour and dough; and Moisture distribution in food products.

## Tell 'em how to heat it!

Having carried out thousands of tests, we know that providing good heating or cooking instructions is as important to the quality and safety of a product as is the effort spent creating the product. Many potentially good products are spoilt by inadequately developed instructions - whether for microwave or conventional heating. Greg Hooper explains how we can help you avoid the pitfalls:

*"Instructions should be developed to ensure that all areas attain a safe heat process and prevent a reduction in the organoleptic quality caused by overheating of edges or certain components. The trials performed and instrumentation used depend on the nature of the product under investigation and the heating method."*

*The use of calibrated or performance assessed appliances is crucial. For example, two correctly rated microwave ovens can heat a particular food at different rates and give rise to different hot and cold spot temperatures and locations. This is why it is so important to use a wide range of microwave ovens for developing instructions.*

*The data generated from the instruction development trials can be used to determine the exact lethality of the heating process. Monitoring the temperature of the food during heating can also indicate if and where problems may occur with overheating. Steps can then be taken in the instruction design to reduce these effects."*

## Packaging considerations

The selection of the appropriate package shape and material is particularly important in the safety of microwave heated products. Microwave heated food temperatures can increase until a particular food component (e.g. water; fats, sugars) either boils or starts to smoulder. This can lead to problems with packages melting and possibly igniting, and the migration of plastic components into the food.

Ultimately, whether the product is designed for microwave or conventional heating by the consumer, investing the effort into getting the heating instructions correct is an essential part of delivering the quality of product you want the consumer to experience.

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## Food chain traceability

Seminar 20 October

Strengthening the integrity of the food chain by supporting safety and authenticity control mechanisms.

Traceability is a familiar concept to the food industry - it is specified in food and feed regulations and in private voluntary standards. But effectively achieving traceability is another matter. In order to address this gap between concept and implementation, we are holding a seminar to provide an update on current developments and opportunities to apply traceability technology in the food sector. The seminar will also address the latest in authenticity testing and will illustrate the commercial implementation of traceability through industry case studies.

See [www.campden.co.uk/food-chain-seminar.htm](http://www.campden.co.uk/food-chain-seminar.htm) for more details, or contact:

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## Publications corner

### Science and Technology textbooks available from Campden BRI

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.campden.co.uk/publ/books.asp](http://www.campden.co.uk/publ/books.asp)

#### *Recent releases include:*

Food and beverage stability and shelf life  
Reducing saturated fats in foods  
Functional foods: concept to product (2nd edition)  
Multifunctional and nanoreinforced polymers for food packaging  
Food and beverage packaging technology  
Technology of bottled water  
Vegetable oils in food technology  
Food additives databook 2nd Edition  
Processed cheeses and analogues

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## Welcome... to new members

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

**Anglo European Commodity Brokers Ltd** - importers and exporters of spices, herbs and sugar

**Baking Technology Centre** - part of AB Mauri's Baking Technology Group

**CEVA Container Ltd** - a company concerned with the hire and sale of intermediate bulk containers

**DHL Agri-foods** - a logistics company concerned specifically with agricultural products

**Greiner Packaging** - manufacturer of pots and lids mainly for the dairy industry

**Ichiban Foods** - manufacturer of Japanese chilled sushi products

**The Incredibles Ltd** - trading as Fabulous Foods - provider of organic noodles and soups

**NB Certification Ltd** - a certification company

**QVC** - Television shopping channel

**Venky's XPRS, Uttara Foods and Feeds PVT Ltd** - chain of take-away restaurants, part of VH Group

**Wagamama** - restaurant chain

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Please notify the Membership Department of any name or address changes with respect to our mailing list.

