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Significant developments in bread processing will lead to new opportunities for the baking industry to produce bread of improved quality with reduced energy input. Research has been undertaken within the project "A Radical Approach to Industrial Breadmaking", the aim of which was to design a new process for the production of pan bread. The Chorleywood Bread Process (CBP) was used as a comparison to evaluate the effectiveness of the new approach across a range of parameters.

The line of development for this process considered energy consumption, product quality and sensitivity to raw material variability as key factors. The results obtained show that improvements have been achieved in each of these areas.

The new approach combines specific process operations to give doughs having unique characteristics at a reduced energy input. The bread made by the new process has excellent quality overall, comparing favourably with control samples in laboratory tests.

We have submitted a patent application based on the new process with a view to subsequent commercial exploitation with interested parties. Members having an interest in this area are invited to contact us directly to arrange a demonstration of the technology.

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Wine experts detect fraud

Whilst investigating a £100K insurance claim for vintage (1860s) wine that had been damaged, experts at our wine operation, Corkwise, discovered that the wine had been filled in a type of bottle that only became available about 100 years later, suggesting that the wine was not quite as old as it was claimed to be! This provides a striking example of how we can help the wine industry with quality and authenticity issues. For more details on how we may be able to help you:

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New methods to measure dough handling properties

We have been working on dough properties and how they are affected by stresses induced by reduced salt or handling at high temperatures and/or high humidity levels. The methods used to measure dough stickiness have limitations, and this is restricting development work, both here at Campden BRI and in industry.

To address this, we will be working with The University of Birmingham through a postgraduate studentship to develop new methods for the measurement of dough handling properties. This will be partially funded through a member Club scheme, but with the EPSRC (Engineering and Physical Sciences Research Council) providing the majority of the funds.

This is an ideal way for Club members to gain access to the results of the work, but at a fraction of the cost of other Club projects.

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New ESN Chair

Chantal Gilbert, Sensory and Consumer Research Manager at Campden BRI, has been elected Chair of the European Sensory Network (ESN). Chantal comments:



"The ESN is an international forum for scientific exchange and collaboration among institutions involved in sensory and consumer research. It brings together 23 member organisations acting in 16 European countries, and four non-European countries. As chair, my role is to run the meetings, facilitate discussion and liaise with outside contacts and other sensory organisations - basically to make sure that the network members share ideas and experiences to learn from each other and develop standard approaches in sensory science. ESN has recently established ESN-Industry Network Partnerships across a broad spectrum of food and non-food industries. We currently have 18 Industry partners. This enables us to draw on a wide range of experience in meeting members' needs, as well as contributing to the continuing development of our sensory scientists."

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Service FEATURE

Clean label reformulation

Reformulating products, or developing new ones in response to legislation and consumer demands and preferences is a complex process - requiring knowledge of ingredients, processing techniques, and packaging materials, and the interactions between them.

We have expertise in all of these fields and can bring them all together to help you make the right decisions, as Craig Leadley, New Products and Technologies Manager, explains:

"Reformulation can be driven by a number of issues. Recently we have seen a surge of interest in 'clean label' issues, with clients looking to replace artificial additives with ingredients perceived as being more "natural". A straight swap is rarely the answer and expertise is required on how ingredients interact with each other, and how product stability and sensory properties might change.



In addition, there is much interest in investigating potential replacements for the Southampton 6 colours - synthetic colouring materials that may have an adverse effect on attention and hyperactivity in children. We are also involved in a major project on the replacement of sulphur dioxide in food products, which stands us in good stead to help clients with similar wishes.



When reformulating, several options may be put forward and it is necessary to eliminate ideas that won't work in practice, before testing out the most promising ideas in our pilot plant and process hall facilities. We can help across the full range of food types - from bakery products, through fruit and vegetable products, soft and alcoholic drinks including organic beers, and meat and poultry products, to soups, sauces and ready meals. We can even help with pet food development!"



Charles Speirs, Baking Science and Technology Manager, agrees:

"We have worked with Craig's team on a range of projects looking at edible films and fat and moisture barriers - addressing consumer pressure for higher quality longer shelf life products. We have also looked at salt reduction in products, following the initiative of the Food Standards Agency to reduce salt intake from a whole range of foods. As well as processing and flavour issues (for example, salt facilitates dough processing and improves the flavour of bread), this also has implications for food safety in some products - salt lowers water activity and thus has an antimicrobial effect."

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Evaluating instruments in the brewing industry

Brewers are demanding a simple way to both improve and streamline their instrument purchasing decisions. We have launched www.compareinstruments.com to satisfy this demand, by enabling them to look at the range of instruments available for particular tasks and compare product assessments and clients' comments. This database currently covers laboratory instruments, but will be expanded to include in-line and other instruments. For each instrument listed there is a short description and links for further information; this can include the manufacturer's brochure and reports of assessments done at Campden BRI or elsewhere. There is also an e-mail link to the supplier to obtain further details or to purchase the instrument.

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Save money, improve quality, get Superchilled!

Do you want to save money?
Do you want to reduce your carbon footprint?
Do you want to reduce waste?

If you have answered 'yes' to any of the above, then it is likely that you will be interested in 'Superchill' technology (also known as 'Deep Chill'), in which products are partially frozen, generally between 0°C and -12°C, allowing an extended shelf life for a chilled

product without many of the disadvantages associated with full freezing (e.g. high energy costs, loss of quality or consumer perception of the lack of freshness of a product). The longer shelf life associated with superchilled products also translates into manufacturing cost savings, allowing larger batches of products to be made and stored prior to release to the chill chain.

We have successfully submitted an outline proposal for a DEFRA LINK project investigating the possibilities offered by using superchill storage. The project aims to quantify the process required to achieve superchill storage with an acceptable product quality, and to quantify the extension in shelf life that can be achieved for a wide variety of products. Part of this quantification will use a novel high-throughput sequencing technique that has the potential to identify the majority of microorganisms within a product, allowing accurate instruction on post-superchill storage to be generated. We are currently looking for partners to join the consortium, and welcome approaches from any company that would like to take advantage of the possibilities offered by superchill technology.

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Supporting BFFF

We are delighted to have been supporting the British Frozen Food Federation in a series of seminars held around the country. These seminars included an introduction to BFFF and its membership services, a review of their foodservice promotional activity, a run through the range, benefits and quality of their events and a detailed review of their consumer promotion activity and plans.

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Member-funded research

With around £2M funds available, members have been voting for which research projects they want us to carry out in 2010 and beyond. The successful projects were:

- Evaluation of the efficacy of natural materials as redox reagents in bakery food systems
- Sodium reduction in baked goods
- Using natural antioxidants to improve the shelf-life of foods
- New technologies for food manufacturing
- The future for laboratory analysis in food factories
- Determination of bulk and interfacial properties in dough systems
- Cost-effective monitoring of product quality through new electronic sensor technology
- Manipulation of portion sizes to positively influence satiety
- The wellness lifestyle concept and the opportunities it presents for new product development
- The control of *Salmonella* in low A_w products and their environments
- Evaluation and validation of shelf-life testing protocols: a practical study
- A guide to microorganisms of importance in foods and their control

Campden BRI at Foodex

We are taking a leading role in the newly revamped Foodex exhibition that takes place at the NEC in Birmingham on 21-24 March 2010. On Monday 22 March, we will have our own event - the Campden BRI Innovation Day. This will bring 9 topical presentations from our annual Campden Day to visitors so that they can discover just some of the research that has been undertaken and meet the experts involved. The topics to be covered will include allergens, antioxidants, high pressure and other novel processing systems, and microbiological shelf-life prediction. After each presentation there will be an opportunity for questions, or visitors can come to the Campden BRI Stand at the Food and Drink Expo (Stand Number Q228) for a more in-depth discussion. To register for this free event, go to our website at www.campden.co.uk/training/innovation-day.htm.

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WELCOME TO NEW MEMBERS

Campden BRI is delighted to welcome the following new members who joined in October 2009:

BioCote Ltd - an antimicrobial protection specialist

Brinc's Biscuits Co Ltd - a Maltese manufacturer of biscuits

Crimp & Pring Ltd - a purveyor of provisions

G William Ballard Ltd - a producer of apples and apple products

Kellie Solutions Ltd - a specialist in plastics, paper, hygiene and construction materials

Mecserflex Manufacturing Company Ltd - incorporating **Sage Sanitizing Systems**, a manufacturer and distributor of cleaning and sanitizing equipment

Norton Barton Farm - a farm, farm shop and producer of a range of food products

Park Royal Partnership - Food Innovation Centre - a technical support hub for food processing companies in London

Pasto Real S.A. - a Portuguese meat processor

Peaty Mills Plc - a supplier of a wide range of food products

Plant Process Design (UK) Ltd - a provider of professional services and manufacturing solutions

Supply Chain Europe Ltd - a specialist in international logistics

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