

Newsletter

www.campdenbri.co.uk



Sugar reduction using steviol glycosides

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Sugar reduction continues to be an important issue for the food and beverage industry, with increasing pressure from consumers and government seeking reduced calorie options. Many consumers are also resistant to consuming artificial sweeteners such as aspartame. The food and beverage industry is therefore looking for more natural alternatives to such products. One option is the use of steviol glycosides.

Initial work, in a simple system (water), indicated that blending steviol glycosides with sugar was beneficial. Due to its relatively low permitted level of use in beverage systems compared to its relative sweetness it is not expected that steviol glycosides will usually be the sole sweetening ingredient of products.

A second study assessed the flavour profile of steviol glycosides in a more complex fruit juice-based system. By using a toolbox approach of several ingredients, including thickeners and flavourings, it is possible to develop reduced calorie, fruit juice-based beverages. In a product such as this, steviol glycosides may be used for sweetening without the detection of undesirable taints such as bitter aftertaste, but maintaining the characteristic mouthfeel.

In a study with carbonated beverages, a higher level of steviol glycosides was required to make a product with similar flavour profile to a full sugar control. As with fruit juice based drinks, the reduced sugar versions did not have the same flavour profile as the full sugar control.

Your partner for raw materials
and product quality

December 2014

Working with industry, for industry

We are always delighted at the level of support we receive from you, our members, but 2014 has been a stand-out year. We had a record attendance at our member interest groups - which taken together with Scientific and Technical Committee, attracted nearly 1,000 attendances - as well as a near record turn-out at Campden BRI Day.

This level of engagement was particularly important this year, as we worked on our three-yearly refresh of what it is you need from science and technology. The response to this extensive consultation was fantastic and, on its publication in January, will enable us to devise the strategic plans for meeting these needs and promoting them to third parties such as Government and funding bodies.

I would like to thank you for this support - both personally and on behalf of all my colleagues at Campden BRI. Without your regular input we would not be able to ensure that our science, technology and knowledge activities are targeted at the practical issues that matter to you - enabling us to work 'with industry, for industry'. We hope to see you at our MIGs or other business visits during 2015. Your input is always valued.

I wish you and your business a Merry Christmas and a successful New Year.

Steven Walker
Director General

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Raw materials and product quality

www.campdenbri.co.uk/raw

The screenshot shows the 'Raw materials and product quality' section of the Campden BRI website. At the top, there's a navigation bar with links for 'home', 'site map', 'about us', 'contact us', 'Login', 'News', 'Services', 'Research', 'Knowledge', and 'Member zone'. Below the navigation is a banner featuring images of various food items like fruits and grains, along with a scientist working in a lab. The main content area is divided into several sections: 'Raw materials and product quality' (with a brief description), 'Highlighted services' (listing 'Coefficient of Friction testing', 'Power ultrasound – versatile and powerful', 'Product reformulation', and 'Sugar reduction seminar'), and 'Specialist services' (listing 'Agriculture and raw materials', 'Chemical and microbiological analysis', 'Hygiene', 'Packaging', 'Quality management', 'Legislation advice', 'Information services', 'Specialist training', 'HACCP for Feed', 'Risk assessment of raw materials', and 'HACCP – advanced Raw Material: safety and quality'). At the bottom of the page, there's contact information for Campden BRI, social media links, and links for 'cookie policy', 'privacy policy', and 'terms of use'.

Optimising quality in product reheating

Blog by Greg Hooper
www.campdenbri.co.uk/blog

Project: Improved fibre enriched baked goods

Consumption of wholegrain/fibre enriched bread and other baked goods remains low despite evidence of healthy benefits

www.campdenbri.co.uk/fibre

Sustainable crop protection

White paper by Richard Stanley which looks at problems farmers and growers face and various ways they can modify their pesticide practices to comply with legislation. To receive a copy send an email to auto@campdenbri.co.uk with the subject line: **send protection**

www.campdenbri.co.uk/news-archive

News items and newsletters for 2014 available on our archive.



Professor Martin Hall

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Martin Hall, Campden BRI's Director of Science, has been appointed to the position of Agricultural/Food Advisory Professor at Chonbuk National University (CBNU) in South Korea. CBNU, as a regional flagship university, is responsible for the development of Jeollabukdo's agricultural and food industry. Martin's role will include:

- Providing special lectures and contributing to its International Summer School Programme;
- Networking at national and global level, and assisting in policy making for the regional food industry;
- Involvement in the development of the FOODPOLIS University Research Centre

This appointment recognises Campden BRI's increasing international role in the global food industry, and Martin's particular long-established association with South Korea.

Sam Millar honoured by ICC Fellowship

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Sam Millar, Director of Technology, has been appointed as a Fellow of the International Association for Cereal Science & Technology (ICC) Academy. His appointment recognises the significant contribution he has made to the work of the ICC and to the profession of cereal science.

This is a prestigious appointment to a pre-eminent and influential international association and he is one of only three UK ICC Fellows.

Sam's appointment as Fellow follows on the back of a five year term as an ICC UK national delegate and a member of the ICC executive committee.



Improving high-fibre foods

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Consumption of wholegrain/fibre enriched bread and other baked goods remains low despite considerable evidence linking diets rich in fibre to reduced risks of obesity, diabetes and cardiovascular disease. There is scope for developing new products to appeal to consumer interest in healthy products by using cereals other than wheat. Of particular interest are oats, barley and pseudocereals (such as buckwheat). Soluble fibres (e.g. arabinoxylan, β-glucan or inulin) provide an alternative to cellulose-rich wheat bran and introduce a different set of challenges for processing. These fibres are light in colour and may be more acceptable to consumers. One of the key findings will be a clear understanding of the impact of bran components on dough water absorption and proving characteristics. Nicole Maher explains some recent findings:

"We developed a method for determining water absorption of bran and investigating the effect of water addition on loaf volume. Water holding capacities of wheat and oat bran were determined using a number of methods, including compression and centrifugal force. These showed the effects of bran and water management in dough. Oat bran held less water than wheat bran. During test baking it was demonstrated that increased water content affected dough handling, making it more difficult to process. However, no significant effect on loaf volume was observed within the range of dough consistencies used in industry. We concluded that water addition did not have a significant effect on loaf volume over the range studied. However, a slight increase in bread moisture content was observed with increasing water addition; this may also have an effect on crumb structure of the bread."



Meat and poultry services

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Natural biological variations exist between animals; many factors can affect the quality of the raw material during the life of the animal, conditions at slaughter and subsequent processing and storage. We can help with the delivery of products of a uniform high quality to meet consumer expectations - through consultancy, evaluation of new ideas and research.

Amongst the many services that we can provide for the meat and poultry industry are:

- Product development
- Scale-up and processing
- Microbiological, nutritional and quality analysis
- Shelf-life studies
- Speciation and authenticity

This is all backed up by underpinning research, training courses, seminars and the Meat and Poultry Member Interest Group (MIG).

New coffee roasters acquired

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In support of our coffee science, technology and product development services we have recently invested in both small-scale and production-scale coffee roasters. Roasting is a key operation in coffee processing - all the flavours and aromas of coffee are generated during the roasting process. These acquisitions back up our expertise in blending and tasting, and in coffee technology more generally. Please contact us to find out more about what we can offer in training and consultancy.

Also take a look at the video clip showing the small-scale roaster in operation at www.campdenbri.co.uk/videos.php

Forcing out a shelf life!

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All sectors of the food and drink industry are under increasing pressure to rapidly develop and launch new and innovative products to maintain or increase market share. Part of the product development cycle is to set a suitable shelf life. For ambient stable products with long shelf life (6 months plus), as well as some perishable, chilled products, commercial pressure means it is rarely feasible for full term shelf life evaluations to have been completed prior to product launch.

An ongoing member subscription-funded research project is looking at ways to overcome this. Accelerated shelf-life testing, for example storage at elevated temperatures, may change the dominant chemical, biochemical and microbiological spoilage mechanisms, thereby affecting the relevance of the trial. However, comparing the performance of a test product (unknown shelf life) and an existing product (known shelf life) under such 'forcing' conditions may provide the route forward. Current work is assessing whether such comparisons can reliably predict shelf life and, if so, whether such reliability is dependent on product or spoilage type.



Our understanding of the chemical and physical characteristics of raw material can help you manage quality related issues

news...

Primary production and processing - a new department

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A new department at Campden BRI will benefit members and other clients by bringing together key expertise in the areas of primary production, raw materials and ingredients, and primary processing operations. Reflecting the closer integration within the supply chain, the Department of Primary Production and Processing will provide a consolidated focus for areas from cereals, fresh produce and animal feed, as well as their post-harvest storage and handling.

It strengthens the links between the areas of primary production and primary processes such as milling, as well as providing closer integration of services offered to companies supplying into primary production - such as plant breeders and suppliers of agrochemicals and equipment. Building on historic areas of focus at Campden BRI, the new department provides greater critical mass, thus providing a platform for a broader range of services to clients.



Approved supplier

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When you are looking to evaluate companies for inclusion on your list of approved suppliers, you will quickly see that risks lie within the areas of technical competence, validity and reliability of results, customer services and integrity.

Evaluating Campden BRI (Chipping Campden) Limited as an approved supplier

We operate within the framework of UK and EU Laws and regulations, thus addressing the risk associated with integrity (employment law, H&S regulations, The Bribery Act etc), and participate in a programme of third party assessments, providing assurances in relation to technical competence, validity and reliability of results, and customer service.

On our website, we have collated the type of information you will need when including **Campden BRI (Chipping Campden) Ltd** on your 'approved suppliers' list. This includes ISO 9001 certification and scope of registration, 17025/UKAS accreditation and scope, facilities, terms and conditions and insurance cover.

Legislation - help at hand

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Those working in technical or regulatory roles in the food industry need to be conversant with many regulations and associated pieces of guidance. It's not just FIC! No sooner do you think you are on top of it all that it gets changed! It is even more challenging when you start to view the world on a global regulatory scale. The challenge then is to keep up to date. You could spend time doing your own horizon scanning by regularly checking key websites for updates, then reading and trying to understand what they mean for you. You could even keep your own reference library of all these pieces of information, but this is time consuming.

This is where our Regulatory Affairs team can help you out. They routinely search for updates, which get published twice monthly as our highly regarded Food Law Alert. This is free to members and contains everything you need to know to be well-informed. If you have not tried it, then contact us and we will add you to our circulation list. For those who would like to have an electronic library of regulations and guidance at their finger tips, we have our own in the form of our web-based Food Law Notes, and are happy to share it! So, if your New Year's resolution is to keep completely up to date then please get in touch, we would love to help you out.



Training events

January 2015

- 16 BRC Standard Issue 7 briefing session
- 19-23 Food safety - advanced (CIEH level 4)
- 20-21 Internal auditing - principles and practices
- 27-28 HACCP - intermediate (level 3)
- 29 Consumer research - for product development

February 2015

- 2-6 HACCP - advanced (level 4)
- 4 Threat assessment critical control point (TACCP)
- 10-11 Understanding microbiology - foundation
- 12 BRC Standard Issue 7 briefing session
- 17-18 HACCP for feed - intermediate (Level 3)
- 23-27 FSSC 22000 Auditor/Lead Auditor course
- 23-26 Sensory evaluation workshop
- 24-25 Food and drink labelling
- 24 Root cause analysis

A full list of 2015 scheduled courses is available on our website www.campdenbri.co.uk/training.php or by requesting a booklet from training@campdenbri.co.uk +44(0)1386 842104

Expert trainers
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Over 350 programmes delivered
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www.campdenbri.co.uk/training.php

New BRC Standard

www.campdenbri.co.uk/brc-briefing-sessions.php

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The BRC Global Standard for Food Safety Issue 7 will come into effect next year. Working with BRC, we are holding a series of half-day briefing sessions in early 2015 to help certificated companies find out about, understand and interpret the changes/updates to the Standard. In particular, delegates will:

- hear a summary of essential requirements for certificated sites
- get details on one of the new requirements - vulnerability assessments
- be able to meet and talk to key members of BRC and a certification body

Mill intake training

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Aimed at intake laboratory technicians, grain traders and those wishing to develop technical expertise associated with wheat intake, this 2-day course gives an overview of wheat sources and properties, including UK, French, German and North American categorisation systems, and the objectives of wheat quality assessment at mill intake.

A mixture of practical training and demonstrations will provide an extensive grounding in the specific analytical procedures involved, as well as broad aspects of accuracy and precision. Methods demonstrated are based on those detailed in the CCAT methods of analysis (see page 7 and www.campdenbri.co.uk/ccat).



Visit Member Zone

www.campdenbri.co.uk/memberzone.php



to access privileged member information and services

You got what you voted for

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With around £2M funds available, members recently voted for the research projects they want us to carry out through 2015 and beyond. The following ten projects, which start from January 2015, complement about 40 other projects in our ongoing research programme:

- An ingredient functionality approach to shelf-life extension of foods
- Next generation techniques for microbiological and chemical food safety
- Quality validation for heat processed foods: improving product quality, reducing process energy and cost
- Development of a risk model to determine an appropriate level of due diligence testing for raw material and final product authenticity
- Manipulation of food structure and protein content to produce satiating, energy-reduced foods and beverages
- Packaging design - a strategic approach to enhance consumers' sensory perceptions and overall enjoyment of healthy food and drinks
- An evaluation of traditional and novel sensory and consumer methods suitable for product characterisation
- Control of viruses in food production
- Exploring new ways (sensory methods) of assessing beers, ciders and other alcoholic beverages
- Predicting the results of hop blending on final beer flavour/aroma using analytical and sensory methods

More details on these and on-going projects will be available in our Research Programme 2015 document in January. Members can also access the websites of existing projects at www.campdenbri.co.uk/projects

Engagement announced!

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This year saw record attendances at our Member Interest Group (MIG) meetings, with almost a thousand attendances across the 13 MIGs and the Scientific and Technical Committee through the year. This fantastic level of member engagement was particularly important this year as we have been consulting with members on 'what it is that industry needs from science and technology' – so that we can help meet these needs directly or by working with collaborators, funding bodies, government and other organisations.

If you have not attended a MIG, give it a go in 2015 – they are great for networking, keeping up with what is happening in industry, and getting the most from our member-funded research programme. The output of the needs consultation will be published in January.

Cereals and cereal applications testing working group: Manual of Methods

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Individual methods from the CCAT Manual of Methods (formerly the Manual of Methods for Wheat and Flour Testing – Guideline 3) are now available to members as a series of free downloads from our website at campdenbri.co.uk/ccat. The most recent addition to the manual is a method for the assessment of ergot sclerotia in cereals. These are a problem, particularly in their primary host rye, because they contain significant levels of toxic ergot alkaloids.

These methods are regularly reviewed and augmented as part of a member-funded research project - *Assuring the quality and safety of cereal-based food products and ingredients for the food industry*. More information on the aims and progress of this project can be found at www.campdenbri.co.uk/research/quality-safety-cereal-ingredients.php.



Welcome to new members

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

Althams Catering Butchers – catering butcher

DO & CO Event and Airline Ltd - event and airline catering company

DRM Industrial Fabrics Ltd - supplier of technical textile filters

Futura Foods - importer of cheese and yoghurt

Green World Innovations – producer of disinfecting and sanitizing ozone based products

Hiklear Dog Food Limited - developer of short shelf life refrigerated dog food

Interflex Group - provider of wax packaging products

Lycored Ltd - supplier of vitamins and mineral dry powders

Safefil Limited - provider of form-seal-fill and in-line bag making and filling systems

Safeguard Biosystems Holdings Ltd - provider of DNA detection equipment

Shepcote Distributors Ltd - manufacturer of hand finished speciality decorations

The Kids Food Company - developer of healthy baby and toddler foods

Clare Brett +44(0)1386 842125 membership@campdenbri.co.uk

Please notify the Membership Department of any name or address changes to allow us to keep our records up to date.

Social media



Facebook - find out more about our history and our lighter side www.facebook.com/campdenbripage

Twitter - regular tweets to keep up to date with our latest news and activities <https://twitter.com/campdenbri>

YouTube - a range of videos providing an insight into the science and technology underpinning food and drink production www.youtube.com/campdenbri

LinkedIn - company updates providing our latest news www.linkedin.com/company/campden-bri

iTunes - subscribe to our podcasts

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