

PRESS RELEASE

Campden BRI shows superchilling can safely extend shelf life by 120%

Research carried out by Campden BRI has shown that superchilling can safely extend the shelf life of chilled foods without any loss of sensory quality. Superchilling reduces the temperature of food products to around -2°C so they become partially frozen. The products are stored at that temperature until being released into the chill chain.

The greatest extension in shelf life was achieved with prawns. The lab research showed that superchilling could increase the shelf life of cook-chill prawns to 22 days. This offers a potential 120% increase on the 10 day chilled shelf life subject to the protocol being implemented commercially. Campden BRI also looked at the effects of superchilling on poultry and gammon.

Dr Greg Jones, a microbiologist at Campden BRI and the project coordinator said: *“Superchilling is not a novel technique. It is used on an ad-hoc basis to build stock in times of high demand, such as Christmas or a ‘barbecue’ weekend. Up until now there has been little data to support its use more widely and little information on the impact of its wider use on product safety. Our research shows that it can be used to extend shelf life without compromising the quality or safety of these products”.*

In addition to extending shelf life, Campden BRI has demonstrated that superchilling can also reduce energy use and waste. Campden BRI calculated the energy required to produce and distribute both superchilled and chilled farmed salmon. Although superchilling fish requires more energy during manufacture, more fish can be packed into each vehicle - because superchilling negates the need for ice during transportation - so fewer journeys are required. The extra energy used to superchill rather than chill was equalled in fuel savings by the time the fish had been driven the 477km from Stornoway to Glasgow.

The extended storage life also provides the opportunity to make chilled product to stock rather than to

order, limiting waste from over-production that is not immediately dispatched.

Further advantages identified by the industrial partners in the consortium included a longer Minimum Life On Receipt (MLOR) for retailers, reduced start-up and shut-down losses due to the possibility of longer production runs, and a reduction in overtime payments from reducing weekend workload.

Campden BRI carried out the research as part of a defra-funded project in conjunction with industrial partners Marks and Spencer, Penguin Foods, Lyons Seafoods, The Scottish Salmon Company, Tulip and Moy Park.

Campden BRI (www.campdenbri.co.uk) provides technical, legislative and scientific support and research to the food and drinks industry worldwide – with a comprehensive “farm to fork” range of services covering agri-food production, analysis and testing, processing and manufacturing, safety, training and technical information services. Members and clients benefit from industry-leading facilities for analysis, product and process development, and sensory and consumer studies, which include a specialist brewing and wine division.

*** Ends ***

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Notes to editors

1. An accompanying photograph is available from Ms Karen Jones, Campden BRI, Station Road, Chipping Campden, Glos. GL55 6LD, UK. Karen.jones@campdenbri.co.uk +44(0)1386 842204
2. [Campden BRI](http://www.campdenbri.co.uk) specialises in the practical application of technical excellence to support the food and allied industries through analysis and testing, operational support, research and innovation, and knowledge management. It is the world's largest membership-based food research organisation, with over 2400 members from around 80 countries. It has nearly 400 staff based at its three sites: Chipping Campden (Headquarters), Nutfield (Surrey - brewing division), and Budapest (Hungary).
3. Its activities include assuring the safety of food and drinks, [food processing and manufacturing](#) support, [food analysis and testing](#), [training](#) and [publishing](#). Each year it hosts hundreds of business visits and trains around 6,000 people from food and drink companies worldwide. Further information on its activities can be found at www.campden.co.uk
4. Expertise at Campden BRI includes:
 - a. [manufacturing technologies](#) - food processing (heating, chilling, freezing), aseptic technology, [microwave heating](#), [malting and brewing](#), [milling](#), [baking](#) and extrusion technology, and process control and instrumentation, [packaging technology](#)
 - b. safety assurance - including [hygiene and sanitation](#), [microbiology](#) and preservation, processing technologies, analysis and testing (microbiological, chemical), and quality and safety management,

- c. [product development](#) and quality, [consumer studies](#), market insights, [sensory science](#), [authenticity testing](#), shelf-life evaluation, labelling and [legislation](#)
- d. [agri-food production](#), ingredients, raw materials, raw material technology,
- e. underpinning science - [cereal science](#), [microbiology](#), [chemistry and biochemistry](#), molecular biology

5. Facilities at Campden BRI include:

- a. 3,000 sq m of laboratories for food and drink microbiology, hygiene, chemistry, biochemistry, molecular biology, brewing and cereal science, and packaging technology
- b. 3,500 sq m food process hall and [pilot plant](#) including malting and brewing, retorting, chilling, milling, baking, hygiene and packaging
- c. 800 sq m of dedicated training and conference facilities