



THE UNIVERSITY *of* EDINBURGH

News Release

Issued: Friday 28 August 2015

UNDER STRICT EMBARGO UNTIL 0001 BST, MONDAY 31 AUGUST 2015

Slower melting ice cream in pipeline, thanks to new ingredient

Childhood memories of sticky hands from melting ice cream cones could soon become obsolete, thanks to a new food ingredient.

Scientists have discovered a naturally occurring protein that can be used to create ice cream that is more resistant to melting than conventional products. The protein binds together the air, fat and water in ice cream, creating a super-smooth consistency.

The new ingredient could enable ice creams to keep frozen for longer in hot weather. It could also prevent gritty ice crystals from forming, ensuring a fine, smooth texture like those of luxury ice creams. The development could allow products to be manufactured with lower levels of saturated fat – and fewer calories – than at present.

Researchers at the Universities of Edinburgh and Dundee developed a method of producing the new protein – which occurs naturally in some foods – in friendly bacteria. They estimate that ice cream made with the ingredient could be available within three to five years.

The protein works by adhering to fat droplets and air bubbles, making them more stable in a mixture. Using the ingredient could offer significant advantages for ice cream makers. It can be processed without loss of performance, and can be produced from sustainable raw materials.

Manufacturers could also benefit from a reduced need to deep freeze their product, as the ingredient would keep ice cream frozen for longer. The supply chain would also be eased by a reduced need to keep the product very cold throughout delivery and merchandising.

The protein, known as BslA, was developed with support from the Engineering and Physical Sciences Research Council and the Biotechnology and Biological Sciences Research Council.

Professor Cait MacPhee, of the University of Edinburgh's School of Physics and Astronomy, who led the project, said: "We're excited by the potential this new ingredient has for improving ice cream, both for consumers and for manufacturers."

Dr Nicola Stanley-Wall, of the University of Dundee, said: "It has been fun working on the applied use of a protein that was initially identified due to its practical purpose in bacteria."

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