

New lactic acid bacteria create natural sweetness in yogurt

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Researchers at DTU have developed a yogurt bacterium, which can cleave lactose in a cost-effective and sustainable manner. This makes it possible to create natural sweetness in yogurt with less added sugar.

Yogurt without added [sugar](#) is a relatively sour experience. Often fruit or berries are added to improve taste, and sugar or sweeteners are added to increase sweetness. However, consumers are increasingly demanding natural foods with less added sugar.

To meet this demand researchers from DTU National Food Institute have developed a new and natural way to cleave the [milk](#) sugar, which relies on safe [lactic acid bacteria](#). The developed lactic acid bacteria create natural sweetness in the [yogurt](#), thus reducing the need for added sugar.

Lactic acid bacteria with lactase can break down milk sugar

Yogurt is fermented milk, and milk naturally contains around 50 grams sugar (lactose) per liter. Milk sugar is characterized by its low sweetness, but by breaking down lactose with enzymes, more sweet sugars (glucose and galactose) are released. By breaking down 70% of the lactose in milk, the sweetness can be increased what corresponds to 20 grams per liter of regular sugar.

Commercially available lactase enzymes currently used for breaking down [lactose](#) in [milk products](#), are made using microorganisms, which involves, a tedious and costly purification process. Furthermore, transportation from the manufacturer site to the dairy adds to the costs.

With the solution that the DTU researchers have developed, the lactic acid bacteria-based lactase can be grown and used directly at the dairy, and in the milk that ends up being yogurt. In this way the costs for purchasing the lactase and transportation are reduced,

The solution has been tested by a large Danish dairy, and the study was

published in the *Journal of Agricultural and Food Chemistry*.

More information: Belay Tilahun Tadesse et al, Consolidated Bioprocessing in a Dairy Setting—Concurrent Yoghurt Fermentation and Lactose Hydrolysis without Using Lactase Enzymes, *Journal of Agricultural and Food Chemistry* (2022). [DOI: 10.1021/acs.jafc.2c04191](https://doi.org/10.1021/acs.jafc.2c04191)

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