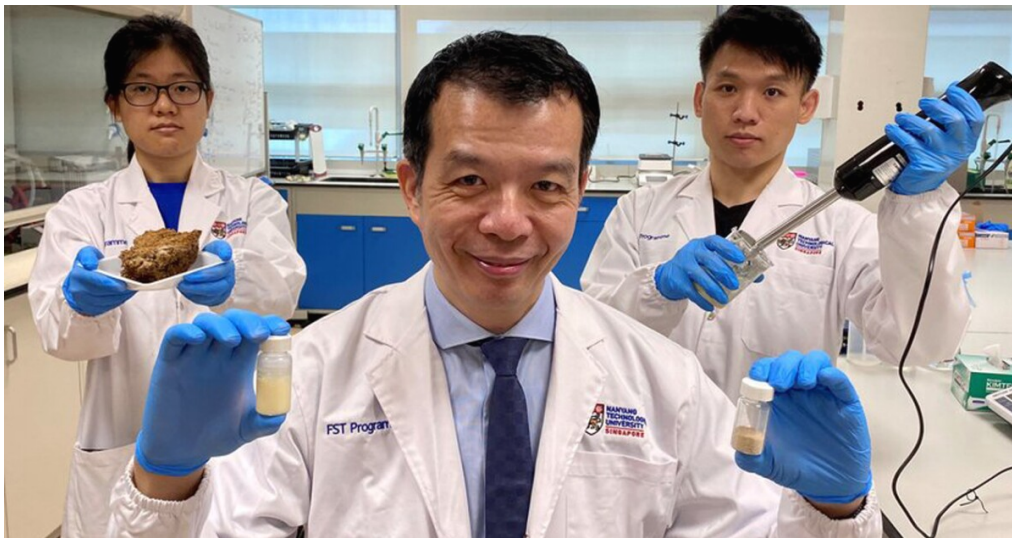


Brewery waste used as an environmentally friendly and nutritious food emulsifier

kriskaito • 7 hours ago



Food additives known as emulsifiers are widely used to combine two liquids that normally do not mix, such as oil and water. Also, most emulsifiers are made from milk protein or egg yolk, while new emulsifiers use used brewing grains, which can otherwise be discarded.

First of all, there *that is* A plant-derived emulsifier that uses ingredients such as gaul gum, soy lecithin, agar, and acacia gum. But one of the things that makes this latest one special is the fact that it utilizes existing waste that is often dumped in landfills. Moreover, *this* The emulsifier is claimed to actually increase the nutritional value of the food in which it is used.

Scientists at Nanyang Technological University in Singapore, led by Professor William Chen, *Rhizopus oligosporus* Add the fungus to the used brewing grain and ferment the mixture. During the fermentation process, fungi secrete enzymes that break down the complex molecular structure of grains, making it easier to extract important proteins and antioxidants.

After drying these compounds, they were used as emulsifiers. Emulsifiers have been used as an alternative to traditional mayonnaise emulsifiers.

A sample of mayonnaise purchased at the store with a sample made with a grain-based emulsifier (left)

Nanyang Technological University

First and foremost, the volunteer panel found that the mayonnaise tasted the same as the mayonnaise purchased in traditional stores, while at the same time having a better, more expansive texture. In addition, brewery grain mayonnaise was found to contain more nutrients, antioxidants, and certain essential amino acids. Its fat and calorie content was similar to that of products purchased in stores.

Scientists are currently working on increasing the yield of the protein extraction process and are planning to try emulsifiers on other foods such as ice cream and soy milk. A paper on research was recently published in a journal *Food Chemistry: X*.

"Our emulsifier is an influential solution that not only reduces waste, but also has the potential to improve human diet by introducing widely available plant-based proteins," Chen said. Says. "In addition, our emulsifiers allow us to upcycle products that can be waste. The environmental benefits of upcycling are to minimize the amount of waste and landfill every year. Not only does it minimize the amount of waste sent to, but it also reduces the need to produce using new ones, or raw materials. "

It should be noted that other teams have developed ways to convert used brewing grains into Dietary supplements, biofuel ingredients When charcoal..

Source: Nanyang Technological University

<https://newatlas.com/environment/spent-brewers-grain-food-emulsifier/>
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