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Natural food stabilisers developed from durian seeds

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Core Tip: An all-natural food stabiliser made from the seeds of the durian fruit has been developed by scientists in Singapore.

An all-natural food stabiliser made from the seeds of the durian fruit has been developed by scientists in Singapore.

Although the seeds of the durian – the so-called “King of Fruits in Southeast Asia” – are usually thrown away, scientists from Nanyang Technological University, Singapore (NTU Singapore) have used a patented technique to harvest the thick gum from the seeds.

Using this gum, the team has shown that it could be used as a natural food stabiliser.

Food stabilisers are commonly used in prepared food items to give it a uniform texture and it contains sugar-protein biopolymers, which bind various ingredients that naturally tend to separate.

The durian gum not only contains necessary elements to serve as a food stabiliser, but also supports probiotics.

When compared with regular powder-based probiotics in commercial food stabilisers, the durian seed gum was found to be 20% more effective in prolonging probiotics' lifespan.

In a fridge temperature of four degrees Celsius, the probiotic count using existing commercial stabilisers was significantly reduced after five weeks, compared to two months for the durian seed stabiliser.

The findings are the culmination of a three-year research project led by Professor William Chen, Director of NTU's Food Science and Technology programme.

Prof Chen is now in talks with several interested companies to license and commercialise the research findings.

Potential applications include use in probiotic beverages and as natural food stabilisers. As the food stabiliser from durians are plant-based, they are also suitable for vegetarians and those who avoid animal-based food stabilisers such as gelatine.

“The majority of consumer food contains food stabilisers, which are indispensable to ensure that various ingredients that do not mix well can gel harmoniously,” he said.

“What we have done is to use something we often ignore when eating durians – its seeds – to produce a 100% natural food stabiliser that can even keep our gut system healthy.”

Prof Chen added that the gum can also be used directly as a cheap medium to grow probiotics bacteria, which reduces the production costs for probiotic beverages.

“The total cost for conventional industrial processes to produce probiotic compounds is estimated at about \$60 for every litre of the growth medium,” he said.

“In comparison, our discovery at NTU would only cost around \$13 per litre to produce, which is 4.5 times more cost effective.”

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