

23 January 2019



SCIENTISTS IN SINGAPORE DEVELOP FOOD STABILISER FROM DURIAN SEEDS

Voltar

A team of scientists from Nanyang Technological University (NTU) in Singapore has developed an all-natural food stabiliser from the seeds of the durian fruit.

The durian, a thorny fruit known for its unique taste and smell, is popularly dubbed the king of fruits in Southeast Asia.

Its seeds (about 3-4cm in diameter) are normally thrown away after the flesh is consumed, but using a patented technique to harvest the thick gum from the seeds, an NTU team has shown that it could be used as a natural food stabiliser.

The durian gum harvested by the NTU researchers 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' lifespans.

In a fridge temperature of 4°C, 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, who 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 is plant-based, it is also suitable for vegetarians and those who avoid animal-based food stabilisers such as gelatine.

Professor Chen said: "The majority of consumer food contains food stabilisers, which are indispensable to ensure that various ingredients that do not mix well can gel harmoniously. 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."

"The total cost for conventional industrial processes to produce probiotic compounds is estimated at about \$60 for every litre of the growth medium. In comparison, our discovery at NTU would only cost around \$13 per litre to produce, which is 4.5 times more cost-effective."

Providing an independent view of the discovery made by the NTU research team, Shilpa Thakker, senior director for research, quality, nutrition and Technology at Kellogg Asia Pacific, said: "Here we see innovation, sustainability and commercial ability delivering a novel ingredient that can be used across multiple (food and non-food) categories. This innovation gives an overview of leveraging current food trend in the use of food by-products to develop functional ingredients."

"Future studies should now address the challenges associated with the sensory properties of the new products, including ingredients obtained from by-products, and consumers' attitudes towards these sustainable novel food whilst meeting the functional properties it promises."

Professor Chen said that his research was largely driven by the challenges that climate change brought to future food production systems, and the need to overcome them sustainably through upcycling food by-products.

"At present, a majority of natural stabilisers are harvested from acacia trees' gum, but with climate change rapidly affecting seasonal harvests, alternative and more sustainable sources need to be explored," he said.

"On average 6 million durians were consumed by Singaporeans in the first half of 2018. If each durian contained around 300g of seeds, 3,600 tonnes of seeds were thrown away that year. By using durian seeds, we not only demonstrate that food by-products can be upcycled in a cost-effective way but also how it can be beneficial for industry and society."

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