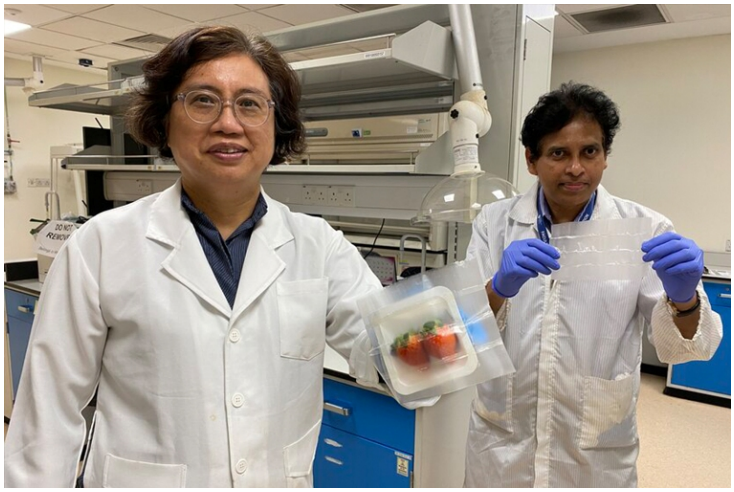
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Singapore develops smart food packaging to keep microbes at bay

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A team of scientists from Nanyang Technological University, Singapore (NTU Singapore) and Harvard T.H. Chan School of Public Health, US, has developed a ‘smart’ food packaging material that is biodegradable, sustainable and kills microbes that are harmful to humans.



Researchers hope to scale up their technology with an industrial partner, with the aim of commercialisation within the next few years

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It could also extend the shelf-life of fresh fruit by two to three days. The natural food packaging is made from a type of corn protein called zein, starch and other naturally derived biopolymers, infused with a cocktail of natural antimicrobial compounds. These include oil from thyme, a common herb used in cooking, and citric acid, which is commonly found in citrus fruits.

In lab experiments, when exposed to an increase in humidity or enzymes from harmful bacteria, the fibres in the packaging have been shown to release the natural antimicrobial compounds, killing common dangerous bacteria that contaminate food, such as E. Coli and Listeria, as well as fungi.

The packaging is designed to release the necessary miniscule amounts of antimicrobial compounds only in response to the presence of additional humidity or bacteria. This ensures that the packaging can endure several exposures, and last for months.