

# NTU team develops natural preservative that can keep food fresh a lot longer



Professor William Chen and his team used genetically modified yeast to produce the flavonoids. PHOTO: NTU

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SINGAPORE - Scientists have discovered a natural preservative that keeps food fresh for at least eight times longer than artificial preservatives, and at roughly the same cost.

It can be used on meats, fruits and juices, among other types of food vulnerable to bacterial infection, said Professor William Chen from Nanyang Technological University (NTU) on Thursday (Aug 16).

The director of the university's food science and technology programme said that the research team is already negotiating with commercial players and hopes to get its product in the market within two years.

The preservative is made from flavonoids, a group of naturally-occurring substances found in almost all fruits and vegetables.

Prof Chen's team did not extract flavonoids directly from plants because it would entail the substances being processed in a way that will impact human hormone production. Rather, the team used genetically modified yeast to produce the flavonoids.

Tests showed that meat and fruit juice treated with the natural preservative stayed fresh for two days at room temperature, while untreated samples grew bacteria within six hours, making the food unsafe for consumption.

Prof Chen estimates that \$2 worth of flavonoids is enough to treat 1,000 litres of fruit juice.

"This preservative may open new doors in food preservation technologies, providing a low-cost solution for industries which could... produce healthier food that stays fresh longer," he said.

"Nowadays, consumers are increasingly aware of the different additives, preservatives and chemicals in processed food. Our discovery points to the possible replacement of these chemical preservatives with natural ones," he added.

Said Mount Elizabeth Medical Centre consultant medical oncologist Gabriel Oon, who was not involved in the research: "The new source of natural food preservatives from flavonoids safely produced from yeast by NTU is brilliant."

Dr Oon, a former consultant and adviser to the World Health Organisation, added: "Flavonoids are important natural food supplements with vitamins, but are also used as food additives without causing harm to the human system. This is unlike currently available artificial preservatives used in most processed foods... which may cause cancer, among other adverse health effects."

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