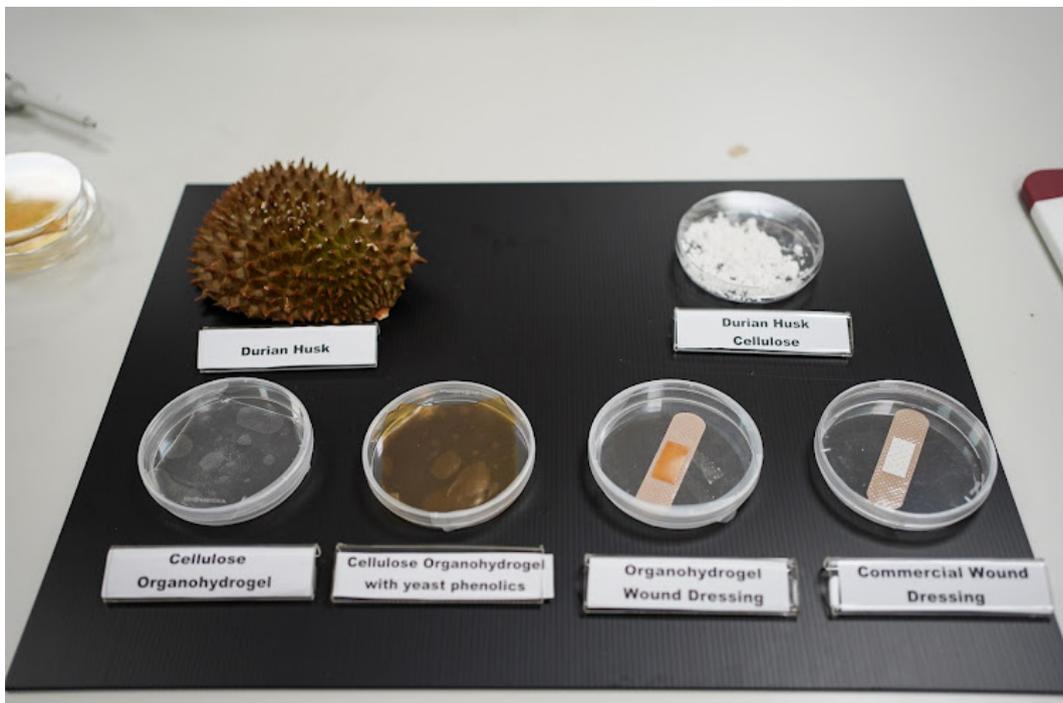


## FOOD

# From fruit leftovers to bandages: Scientists turn food waste into plasters

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BY TRAVIS TEO AND LEE YING SHAN



Petri dishes containing different steps and procedures at Nanyang Technology University to turn durian husks into antimicrobial bandages, with the final bandage product juxtaposed against a commercial bandage at bottom right.

**Image:** Lee Ying Shan/Reuters

Scientists at Nanyang Technological University (NTU) in Singapore are tackling food waste by turning discarded durian husks into antibacterial gel bandages.

The process extracts cellulose powder from the fruit's husks after they are sliced and freeze-dried, then mixes it with glycerol. This mixture becomes soft hydrogel, which is then cut into bandage strips.

"In Singapore we consume about 12-million durians a year, so besides the flesh we can't do much about the husk and the seeds and this causes

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The fruit's husks, which make up more than half of the composition of durians, are usually discarded and incinerated, contributing to environmental waste.

Chen said the technology can also turn other food waste, such as soy beans and spent grains, into hydrogel, helping limit the country's food waste.

Compared to conventional bandages, the organo-hydrogel bandages are also able to keep wound areas cooler and moist, which can help accelerate healing.

The researchers said using waste materials and yeast for the antimicrobial bandages is more cost-effective than the production of conventional bandages, whose antimicrobial properties come from more expensive metallic compounds, like silver or copper ions.

A durian wholesaler, Tan Eng Chuan, said he goes through at least 30 crates of durians a day during durian season, or as much as 1,800kg. Being able to use the parts of the fruit that are ordinarily discarded, he said, was an innovation that would make enjoying it "more sustainable".

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