

Researchers use natural gum to extend shelf life of fresh fruits

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University of Queensland studies have used natural tree sap gum and light to extend the shelf life of fresh fruit and vegetables to combat food waste.

The Queensland Alliance for Agriculture and Food Innovation (QAAFI) research used edible coatings made from gum Arabic or acacia gum, enriched with aqueous extracts from native Australian plants, to stop the growth of microorganisms which cause spoilage.

The research team also used light and curcumin, a compound extracted from turmeric, to deactivate fungal spores on food, in particular strawberries.

QAAFI's Dr Maral Seididamyeh said both methods were effective in keeping food fresh for longer.

“Using our edible coating, we were able to prevent the growth of spoilage microorganisms in fresh-cut capsicum for around 10 days in the fridge,” Dr Seididamyeh said.

“This was mostly due to the organic acids and phenolic compounds found in the aqueous extracts of plants like Cape York lilly pilly, boonjee tamarind, and Tasmanian pepper leaves.

“These extracts not only showed promising antimicrobial properties, but the sensory analysis also revealed that they enhanced the overall sensory attributes.”

“The curcumin-based photosensitisation technique completely deactivated fungal spores of *Botrytis cinerea* the pathogen responsible for grey mould in fresh produce.

“When applied to strawberries, it reduced decay incidence and severity by 20 per cent without compromising the fruit’s colour or firmness.”

Dr Seididamyeh said chemical-free methods for preventing food spoilage were in demand.