While nutrient-rich mangos have long-proved their worth in global markets, the fruit's by-products are making a splash of their own as scientists find ways for their peels and skins to create innovative solutions. Most recently, discoveries have shown their potential to benefit industries ranging from plastics to medicine to shipping.

Looking first at plastics, a young researcher from Cebu, Philippines, has discovered how to create bioplastic from mango peels.

According to Ce Daily News, Denxybel Montinola, 23, is showcasing his new form of bioplastic in the 2019 DOST-BPI Science Awards competition, held on August 1 and 2 this week.

“[This] bioplastic is created using components called pectin and carrageenan, which are derived from mango peels and seaweed,” the publication quoted Montinola saying.

He said that this bioplastic is more robust and flexible; it can also mimic the mechanical strength of conventional plastic.

It's safe for the environment as well. Bioplastic does not disintegrate into micro plastic that could harm ecosystems; it completely dissolves in water without releasing toxic chemicals.

Plus, both mango peels and seaweed are sustainable and the raw sources are abundant in many countries.

Potential benefits for medical treatment

Mango peels also hold a great amount of potential for the medical community, Montinola added.

“Not only we can make a bioplastic out of it, but we can also create a tissue scaffold."

Doctors could use this tissue to protect the burned area of patients' skin, he explained.

This mango-derived tissue would also be effective at stopping local bleeding, he added.

Considering these functions, the fruit by-product could be extremely valuable for anyone treating or recovering from a number of injuries.

Scientists use mango leaves to make ships rust-resistant

In another piece of news, a team of Indian scientists has developed a compound from mango tree leaves that can protect ships from rusting, reported Quartz India.

Globally, the corrosion of ships and its prevention costs an estimated US$2.5 trillion, according to a study by the National Association of Corrosion Engineers.

The compound the team created to combat this is reportedly far more efficient than synthetic paints. Moreover, it's non-toxic and environment-friendly.

In developing the remedy, Nishanth K. Gopalan, the leader of the team from the National Institute for Interdisciplinary Science and Technology, chose to use mango leaves for their anti-oxidant properties.

The fruit also contains an abundant content of polyphenols, which can help prevent corrosion, he added.

Gopalan said his team made the compound using an organic compound called epoxy as a base. To that, they added mango leaf extracts in a substrate of amorphous silica, an inorganic material.

After, they tested the solution on commercial steel.

The team discovered the mixture was 99% effective in preventing the material from corroding when immersed in a seawater-like liquid.

As with the other developments, their finding is groundbreaking. It could have significant implications for the future of the shipping industry.