

Could starch be a saviour?

An Indonesian biologist is offering an ecofriendly alternative to plastic bags.

ARE bags made from "bioplastics" the solution to the deluge of litter in Indonesia that has blighted its lands and seas?

(Bioplastics are made from ecofriendly materials like corn starch and vegetable fats and oil that decompose naturally as opposed to conventional plastic, which includes petroleum and natural gas in its makeup and can take years to break down.)

The archipelago of over 17,000 islands is one of the worst cases when it comes to marine littering. US environmental advocacy group Oceans Conservancy esti-

mates the country dumps the second-highest amount of plastic into the world's seas, behind only China.

From bags washing up on Bali's beaches to food packaging clogging waterways in cities, Indonesia is facing a plastic waste crisis driven by years of rapid economic growth. The waves of plastic flooding into rivers and oceans has been causing problems for years – waterways in cities become clogged, increasing the risk of floods, and marine animals face death and injury when they become trapped in



A worker in Jakarta trying to deal with the plastic waste epidemic in Jakarta. — Reuters

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Kumala displaying some of his ecofriendly products, such as tapioca starch bags, sugar cane cups, and corn starch straws. — AFP

plastic packaging or ingest it.

Now an entrepreneur from Bali, disgusted at the rubbish littering the famous holiday island, is trying to tackle the problem with alternatives to conventional plastic.

Kevin Kumala has a company that makes bags from cassava (*ubi kayu* in Malay), a plant from which tapioca starch is extracted; it is also an edible root that is cheap and abundant in the tropics.

The entrepreneur, who is a biology graduate, is happy to demonstrate his bags are not harmful: he puts some material from a cassava bag into a glass of hot water, watches it quickly dissolve, and then gulps down the resulting concoction. Kumala says his products can biodegrade in a matter of months, unlike the years required for conventional plastic to break down.

"I'm an avid diver and surfer, and I'm out there seeing this plastic pollution with my own eyes," Kumala says in a recent interview, explaining why he decided to get into the business of bioplastics.

"It gives hope to sea animals, they won't choke on it or die from ingesting it," he says of his bags, which have the words "I Am Not Plastic" on them.

His company, Avani Eco, produces not only cassava bags but also takeaway food containers made from sugar cane, and straws fashioned from corn starch, all of which biodegrades quickly without leaving toxic residue.

Kumala set up Avani Eco several years ago with its headquarters in Bali and a factory on Java island; the company's goods went on sale in 2015.

About three tonnes of the bags are produced daily and sold to shops and hotel groups, mostly in Bali and across Indonesia, but

also to a growing number of companies abroad.

Being environmentally friendly does cost, however, with a cassava bag typically costing about three US cents (13 sen) more than a normal plastic bag.

While the material for the other products Avani Eco sells are sourced in Indonesia, some items are currently made in China as it is more cost effective to do so – though this does add to their carbon footprint.

However, other bioplastics have long been on the market, and the United Nations Environment Programme (Unep) has expressed scepticism about the industry. The UN body concluded in a 2015 report that they tended to be more expensive and were unlikely to play a major role in reducing marine litter. Unep prefers to manage plastic waste by working with big companies.

Still, Indonesia needs all the help it can get right now to deal with its waste. Current rubbish collection and disposal systems are inadequate to deal with rising plastic use.

Tuti Hendrawati Mintarsih, a senior official at Indonesia's Environment Ministry who deals with waste, concedes there is currently no government funding specifically aimed at reducing plastic waste.

However, she says authorities are planning to implement a nationwide scheme compelling shops to charge for plastic bags this year; the scheme has been tried in other cities and has successfully reduced usage.

Despite the challenges, Kumala is upbeat that Indonesia's plastic scourge can be tackled and has plans to get his products into other countries in the region.

"The whole of Asia is really drowning in an ocean of plastic pollution," he points out. — AFP