Tec professor creates bottle 25 X more biodegradable than normal PET

The bottles are made with an organic additive that reduces the oxidation time of the plastic to between two and six years.
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Courtesy from Maka

Fernando González González, **Tec de Monterrey's director of admissions for the Saltillo campus**, has set up a bottled water company whose **packaging** is capable of degrading **25 times faster** than a **conventional PET bottle.**

The brand's name is **Maka**, which means **"to give" in Nahuatl,** and its bottles are made with an **organic additive** that reduces the oxidation time of plastic to between **two and six years**.

"A normal plastic bottle can take up to 150 years to disintegrate. *We're the only water brand in the country that uses this additive to reduce degradation time,"* he said.

25 times faster

“Garbage dumps have a high concentration of bacteria. ***When this additive is included,*** *the PET molecules expand, allowing the entry of bacteria to* ***accelerate the decomposition process****,”* he explained.

He also pointed out that Mexico **ranks second in the consumption of plastic containers**, which is why he saw an opportunity to reduce the amount of this material in the **environment**.

International award-winning design

According to Fernando, the most complex part of creating their product was designing the packaging, since they decided to make a mold from scratch that would set them apart from other brands.

"We went through about a year of trial-and-error in manufacturing the mold to get the design we wanted," he said.

In 2019, Maka won **two international awards** for the design of its bottles, competing against food and beverage brands from around the world:

- **First place for Best water bottle design at the Dieline Awards.**
- **Second place for Best Packaging Design at the Latin American Design Awards.**

Mexican art on its bottles

The brand’s image incorporates **Mexican elements** such as the Mexican trogon bird, whose feather colors match those of the national flag.

In addition, it includes colors and designs inspired by Mexican muralism, specifically that of **Carlos Mérida,** a Guatemalan painter and sculptor who became a naturalized Mexican.

“We wanted to capture Mexican art, which is why we’re constantly changing the colors and figures on the back of the container,” he said.

Hand-labeled product with social awareness

*“While the entire market is used to cylindrical bottles, Maka created a **rectangular design that couldn’t be labeled in regular machines,”*** he added.

The professor stated that the brand works alongside the movement **Hecho con capacidad** (Made with Ability), which supports people with intellectual disabilities to prepare for work and helps place them in the labor sector.

“Half of our production line** is made up of **people from this association,** and they label **the bottles by hand,” he added.

Maka currently distributes its products in Mexican states such as Coahuila, Nuevo León, Baja California Sur, Querétaro, Guanajuato, and Sonora.

According to the **United Nations**, **an estimated one million plastic bottles are bought every minute**.

Almost a third of all plastic packaging exits the sewer systems and **8 million tons end up in the oceans** each year, threatening marine life.

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