

Tec students transform pineapple waste into sustainable cellulose



CeluNova, a startup created by students at Monterrey campus, has reached the global finals of the 2025 Hult Prize.

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José Manuel Contreras

Can you imagine a diaper made from **cellulose** obtained from pineapple plants that is also sustainable?

Students at the [Monterrey campus](#) aim to make this a reality through **CeluNova**, a project that won the [2025 Hult Prize Mexico](#).

José Manuel Contreras, a financial management student, and **José Adrián Contreras**, a business administration student, are part of this project that transforms pineapple plants into biodegradable raw material.



CeluDova was the winning project of the 2025 HultPrize Mexico. Photo: Carolina Contreras

*“Basically, we use agricultural waste from pineapple plants to produce an eco-friendly raw material called **cellulose**.*

*“We use all the pineapple waste, including the **leaves, roots, and stems**. Every ton of pineapple produced generates around three tons of waste, so we saw an opportunity to take advantage of this waste,” said José Manuel Contreras.*

Cellulose is mainly used in the **paper, packaging, and hygiene product** industries.

*“When the project started in 2020, we considered focusing on bioplastics. However, once we got into the lab and started researching, we discovered cellulose can be used to make **biodegradable diapers**.*

“That’s where we saw a great business idea, one which would also contribute to a circular economy with the farmers, whom we pay for all the waste they discard,” said José Adrián.

This research resulted in a **biodegradable cellulose** that they hope to use in diapers, one of their first products to be marketed.

“We’re still securing investment resources to grow our business.”

- José Manuel Contreras

The Hult Prize Mexico was held on **May 9 and 10** at the Monterrey campus.

This victory qualified them for the global phase, which will be held in September, when **six teams will present their initiatives** for a chance to win one million dollars.

In August, they will travel to London to attend **Global Accelerator**, a program in which they will receive advice, attend workshops, and participate in demonstration days with investors.

Sustainable cellulose process

They explained that the process for obtaining the raw material and producing cellulose is based on **chemical hydrolysis**.

*“One thing that sets us apart is that our processes **use three times less water** and chemicals than traditional cellulose extracted from trees.*

*“Every ton of cellulose we produce saves approximately **17 trees** from being cut down, making this a sustainable venture,”* said José Manuel.

With this business idea in mind, the students first contacted the **diaper industry** in Monterrey.

*“We’re currently in talks with [**Lambi**](#), one of the largest manufacturers of hygiene products here in Monterrey, who are very interested in using our raw material.*

*“We chose this industry because it is one of the most polluting in the world, and one of the advantages of manufacturing diapers with this material is that they only take about **two years to break down**,”* said José Adrián Contreras.

Aiming to expand venture

CeluNova is preparing to open its first **pilot plant in Veracruz**, where they hope to produce this biodegradable cellulose.

*"We're closing a deal with one of the **largest pineapple growers in Mexico**, which will provide us with the waste we need to process cellulose.*

"However, we are still securing investment resources to grow our business," said José Manuel.

"One thing that sets us apart is that our processes use three times less water and chemicals than traditional cellulose." - José Adrián Contreras

The team includes brothers José Adrián and José Manuel Contreras, as well as partners **Adolfo Vidal, Eduardo Méndez, and Diego Elizondo**.

Over the last two years, they have participated in various entrepreneurship forums and competitions such as the [**Enactus World Cup**](#) (Netherlands, 2023) and the [**Moonshot Awards**](#) (Czech Republic, 2024).

They also participated in the [**2024 ILAN Innovation Awards**](#) (Mexico City, 2024) and the [**2024 Sustainable Santander**](#) event.



The CeluNova team has been researching the uses of the pineapple plant since 2020. Photo: Courtesy of José Manuel Contreras

*“These experiences on **entrepreneurship platforms**, including the Hult Prize, have been very valuable to us.*

*“This is because they’ve helped us to refine the project. Although there are still things to improve, we know that we have a product with great **social and environmental value**,” said José Manuel Contreras.*

“We use agricultural waste from the pineapple plant to produce an environmentally friendly raw material.” - José Manuel Contreras

About the Hult Prize

The [Hult Prize](#) is a foundation that supports **new companies** emerging from universities to solve social problems.

This year, it brought together more than **200,000 students** to develop ideas and solutions in line with the United Nations Sustainable Development Goals (SDGs).

Monterrey campus hosted [one of the 20 global semifinals](#) of the Hult Prize to send a representative to the global phase.

The final event will be held at the United Nations headquarters in **New York, United States**.

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