

Mezcal waste: Tec project receives international funding



Professor **Aurea Karina Ramírez** from the **Tec's Querétaro campus** and her “**Sustainable Bioproducts**” research group have received 285,000 dollars of funding to continue their research into reusing and utilizing **waste from the mezcal industry** to produce **proteins**.

This funding was provided by the [Good Food Institute](#), an **American non-profit organization** that promotes innovation in the **food industry** through the development of **alternative proteins**.

The professor explains that her **protein** was created through fermentation. *“Every year, I support projects that are related to the production of alternative proteins in various forms,”* she said.

Only **15 projects** from around the world **were selected** for funding in this call, which promotes high-quality research.



/> width="900" loading="lazy"> **A sustainable alternative**

Interest in the use of **unconventional substances** to generate new physiological value has grown, according to the interviewee.

“We can produce proteins that can be used in different ways, such as food ingredients, supplements, or even as enzymes,” said the professor.

The candidate product that **Sustainable Bioproducts** has selected to carry out these processes is **mezcal bagasse**.

*“We’ve been working with mezcal bagasse, which is the **fibrous waste left over from mezcal production**,”* explained the professor.

Gerardo Zarza Murillo, who forms part of the research team and is studying for a **master’s in Biotechnology** at the [Tec’s Querétaro campus](#), is focusing on using bagasse to grow **white rot fungi**, which can break it down into different nutrients.

At the [Tec’s Toluca campus](#), Biotechnology doctoral student **Jimena Álvarez Chávez** is working to incorporate emerging technologies with a greater focus on sustainability into this degradation.

<https://youtu.be/PE5ahAtISgw>

Reducing the environmental burden

The **Sustainable Bioproducts** team is collaborating on this project with the **State of Mexico government** to obtain raw materials from **mezcal producers in Malinalco**. By doing so, they aim to have a positive impact on the local community.

The professor said that around **150 kilograms of bagasse is generated every day**, which is now being given a **“second life.”**

“I’ve always been quite concerned about human activity and how it affects our environment, so one way to contribute a little is to use the waste we generate and reincorporate it into the economy,” said the professor.

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On the way to sustainable change

[Aurea Karina Ramírez](#) mentioned that she was very surprised and proud to have received the funding as very **few women and Latin Americans** are on the organization’s list of recipients.

The next steps are to invest in more **human resources, reagents, and laboratory equipment**. They will also contribute to scientific understanding through **workshops, “Open Access” scientific publications, and a symposium**.

The **team will use this funding to continue** its research activities **over the next two years** and aims to **optimize protein production** during that time.



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ESTUDIANTE DE MAESTRÍA
GERARDO ZARZA MURILLO



ESTUDIANTE DE DOCTORADO
JIMENA ÁLVAREZ CHÁVEZ

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The members of the “**Sustainable Bioproducts**” research group are:

- *Dr. Aurea Ramírez Jiménez (principal researcher), Department of Bioengineering, School of Engineering and Sciences, Tec Querétaro campus.*
- *Dr. Edgar Tec Caamal (collaborator), Department of Bioengineering, School of Engineering and Sciences, Tec Querétaro campus.*
- *Dr. Alicia Fernanda Galindo Manrique, LCPF, School of Business, Tec Monterrey campus.*
- *Dr. Iván Luzardo Ocampo (collaborator) Obesity Institute, School of Engineering and Sciences, Tec Guadalajara campus.*
- *Professor Piedad Martínez García, Digital Art and Animation, School of Architecture, Art and Design, Tec Querétaro campus.*
- *Dr. Marcela Gaytán Martínez, Professor of Postgraduate Food Studies, Autonomous, University of Querétaro (UAQ).*
- *Gerardo Zarza Murillo, master’s student in Biotechnology.*
- *Jimena Álvarez Chávez, doctoral student in Biotechnology.*

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