

Production of 500 daily litres of bioethanol from food waste

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From waste generated in the processing of cereals, scientists from the Center for Research and Assistance in Technology and Design of the State of Jalisco (CIATEJ) have produced bioenergy in the form of ethanol, and designed a prototype plant that generates 500 litres of bioethanol a day.

The waste employed is from processing corn with high starch, cellulose and hemicellulose content.

In this regard Lorena Amaya Delgado, from the Department of Industrial Biotechnology at CIATEJ, explains that a technique for hydrolysis of carbohydrates in waste from the food industry was developed, and ideal fermentation conditions were established to produce [bioethanol](#) at laboratory and pilot plant levels on the premises of the center, which is part of the National Council of Science and Technology (CONACYT).

"With the information obtained from this research, the basic engineering of the [ethanol production](#) process was carried out, as well as advice for installing a [pilot plant](#) focused on the production of bioethanol from grain waste from the food industry," explains the specialist.

For this project, CIATEJ researchers used hydrolytic enzymes and yeasts with high tolerance to ethanol. Which implied that fermentations were performed with high concentrations of sugars to generate more efficient processes.

Special equipment for those processes was also designed to improve efficiency and performance.

This research project was initiated by the needs of a company in the [food industry](#), which generates significant amounts of waste corn. In this context, CIATEJ gave support with a group of researchers and engineers

to give a specific biotech answer.

"Although it was a project designed at the request of a company, the technology can be adapted to different [waste](#) from the food industries of the country, such as the bakery, dairy and fruit processing sectors, among others," says Lorena Amaya Delgado.

Provided by Investigación y Desarrollo

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