Agribusiness substances obtained from native plants

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Basil

The aromas and flavors perceived in plants are mainly due to the presence of essential oils, substances used as raw materials in the chemical or cosmetic industries. The Mexican Scientific Research Center of Yucatan (CICY), in the south east of the country, studied 20 native species that suggest a potential agricultural use.

In addition, the researchers at CICY built pilot distillation equipment for one hundred liters, with which they made trials to obtain as many essential oils as possible, and subsequently made bioactivity tests and product development.

Luz Maria del Carmen Calvo Irabién, head of research, explained that among the studied species is the Mexican oregano (Lippia graveolens), and basil bush (Ocium campechianum), the first has a potential for use in the agroindustry as essential oil, and both have a high yield, which suggests a potential for commercial use.

In the case of Ocimum campechianum research reports that its essential oil had higher concentrations of eugenol, an aromatic agent widely used in the cosmetic and fragrance industry. Also used as a dental anesthetic which induces effects on the central nervous system in mammals, decreases motor activity, and is an anticonvulsant and general anesthetic.

The specialist at CICY said this plant has antimicrobial and antifungal properties, and also antioxidant properties are attributed to it. "Another species with potential was the hoja santa (Piper auritum) which in its essential oil has a high concentration of safrole, a natural product with high demand in the cosmetic industry."

Basil

The first phase of the project focused on the exploration, recollection, characterization and conservation of native herbs in the region. This information allowed the researchers to assess the performance and composition of essential oils as well as ecological, climate and soil conditions where these species develop. At a later stage, a genetic and agronomic characterization will be made of the most promising species.

"We evaluated the performance and chemical composition of the essential oils of aromatic native species with potential for agribusiness development in the region, plus ecological conditions under which species develop. For future conservation seed were collected in germplasm banks, accompanied by ecological baseline information for further cultivation. So far, we have established germplasm collections in

experimental and demonstration plots in communities within the region and in the botanical garden at CICY," explained Calvo Irabien.

Hoja santa

She concluded that new scientific knowledge generated from the project will provide the basis for developing selection programs of promising genotypes in aromatic species, as well as the best management techniques for domestication, cultivation and vegetative propagation.

Provided by Investigación y Desarrollo

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