

A tomato aroma could protect the crops against bacteria

Researchers from the Institute of Molecular and Cellular Plant Biology of the Polytechnic University of Valencia (UPV) and the Superior Council of Scientific Research (CSIC) have shown that an aroma emitted by tomatoes can protect other crops from infections or drought.

According to the study, which has been published in the journal "Frontiers in Plant Science", tomatoes emit said volatile compound, called "hexenyl butyrate" (HB), to resist the attacks of bacteria, and could be used in other plants, reports the UPV in a statement. "The application of this compound would allow the agricultural sector to have a new natural strategy to improve the yield of crops," said the researcher of the Institute of Molecular and Cellular Plant Biology (UPV-CSIC), Purificación Lisón.

The expert also points out that the treatments with this compound "would protect the crops against biotic and abiotic stresses in a simple, cheap and very effective way."

The compound, she adds, is capable of closing the stomata, "which is the key to the plant's protection," and there is no product on the market with these properties.

She also highlights how easy it is to use. Given that it is a volatile compound, it can be applied both by spraying it on the plant and by means of diffusing devices.

This compound also stands out for its zero toxicity (since its use is also approved for food) and its low cost, the university reports.

Furthermore, it's very easy to synthesize, and according to the tests carried out in the IBMCP laboratories, it is a very effective compound that does not require large doses.

Researchers have shown that the treatment of tomato plants with said compound causes the stomatal closure, protecting them against infection by the bacterium "Pseudomonas syringae".

They have also observed that the tomato plants that have been treated are also more tolerant to drought. Its effectiveness in causing stomatal closure has been tested in various plant species, specifically tomatoes, corn, alfalfa, citrus and tobacco.



"This is what we have demonstrated so far, but the compound's potential is huge," adds Lisón, who says it could also serve as a protective barrier, "not only in situations of drought, but also to protect the plants from other infections caused by various pathogens that enter through the stomata."

The study adds that it could also be used to "control the development and ripening processes", allowing the treated plants to enter a kind of induced "lethargy", since the stomatal closure entails a delay in the development processes.

This could give the producer a new strategy to control harvesting schedules and allow them to adapt better to the market's needs.

The Department of Horticultural Sciences of the University of Florida (US) has also collaborated in this research project, reports the university.

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