

Spain: New way to prevent fungi from infecting plants discovered

A group of researchers from the University of Cordoba (UCO) has discovered the most effective way to manipulate the structure of a pheromone that makes it possible to prevent fungal infections in plants. The finding was been possible thanks to the work of postdoctoral researchers David Turrá and Stefania Vitale, who, together with their team in the Department of Genetics, have studied the structure adopted by the α -pheromone; a small protein that activates the cell receptors of fungi.

Fungus infections annually cause million dollar losses in different types of crops, destroying harvests that could feed hundreds of thousands of people. For centuries, producers have sought ways to block the action of these parasitic organisms, many of which infect the plant through the roots.

Although they currently resort to phytosanitary products called fungicides, these products can contaminate the environment and generate resistance in pathogenic microorganisms, making their use increasingly controversial. Biotechnology and scientific research are essential to continue improving the treatments and prevention of this type of diseases in plants.

The University of Cordoba has been working for years in the study of the biological mechanisms that fungi use to infect crops. In that line of work, the team headed by the Professor of Genetics Antonio Di Pietro has focused on the study of the signals through which the fungus and the plant communicate.

The goal is to short circuit this dialogue at a biochemical level that uses pheromone receptors as a decoy for the fungus to be attracted to the roots.

This latest finding from the UCO team has been described in the Journal of Biological Chemistry by researcher David Turrá, who is focused on the structure of the pheromone in order to find a way to manipulate it and prevent the fungus attraction.

According to the paper, the structure of the pheromone may contain the key to prevent the plants from being infected, as it is produced by the fungi to attract their partners during mating.

The results suggest that it is possible to use this method to deceive the fungus and prevent it from infecting the plant, without the need to eliminate it, as is currently done with fungicides.

Scientists are confident that the method could be used in different crops, such as bananas, melons, tomatoes or chickpeas, by applying chemical reactions to the structures of the pheromones or their receptors.

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