

# Efficient fungus paralyzes and kills pathogens that cause losses in cotton crops

April 15 2015

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Specialists at the Center of Genomic Biotechnology from the National

Polytechnic Institute (IPN-CBG) in Mexico, have identified beneficial fungi that have previously been tested as disease control agents in cotton crops. Among them is *Trichoderma koningiopsis*, which kills the parasite or pathogens that attack the plant.

Originally from Mexico, cotton in the northeast of the country reached growth up to 300,000 hectares a year, but is no longer cultivated due to high consumption of chemicals, and insects and diseases that made the production unprofitable.

José Luis Hernández Mendoza, at the Laboratory of Experimental Biotechnology, explains that this region was isolated and the fungus *Trichoderma koningiopsis* was used to counter the scourge of *Phymatotrichum omnívora*, which generates Texas rot, a main disease of cotton plants.

According to the polytechnic specialist, *Trichoderma koningiopsis* in some cases combats or prevents the growth of pathogens that attack [cotton plant](#), including *P. omnívora*, *Fusarium spp* and *Macrophomina phaseolina*.

*P. omnívora* (Texas rot) is a disease in northern Mexico and the Southern United States, which attacks more than 200 plant species, causing infection in the root, preventing movement of the sap. Infected plants present decay, wilting and death.

The specialist says that the fungus *Trichoderma koningiopsis* in some cases prevents the growth of the phytopathogenic culture and serves as a fungicide. "It prevents its development, inoculating them on the stem of the cotton plants in a greenhouse. The result shows that this fungus increases biomass of the plant."



Furthermore, the fungus *Trichoderma koningiopsis* is also innoculant, as it produces indole acetic acid when mixed with the seed before planting. In this way, it prevents the development of diseases and stimulates plant growth in a single application.

This research states that the prevention of Texas rot has been achieved by implementing the rotation of crops, particularly soybeans, sorghum, cabbage, onion and garlic, which produce substances that prevent the harmful fungi.

The specialist noted that the use and handling of this process involves

user training in handling *Trichoderma* and adopting a technology package.



He stresses that it is important to train [cotton](#) producers to know the mode of action of the [fungus](#), seed treatment and evaluation of lots within their own plots.

The research was conducted at the Experimental Biotechnology



Laboratory, where science teacher Jesus Quiroz Velásquez, Jesús García Olivares and students from Environmental Engineering from the Autonomous University of the state of Tamaulipas also participated.

Provided by Investigación y Desarrollo

Citation: Efficient fungus paralyzes and kills pathogens that cause losses in cotton crops (2015, April 15) retrieved 14 August 2024 from <https://phys.org/news/2015-04-efficient-fungus-paralyzes-pathogens-losses.html>

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