

**TRICHODERMA IN ORGANIC AGRICULTURE**

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E. Monte<sup>1</sup> y A. Llobell<sup>2</sup>

<sup>1</sup> Centro Hispano Luso de Investigaciones Agrarias, Edificio Departamental, lab 208, Universidad de Salamanca. emv@usal.es

<sup>2</sup> Instituto de Bioquímica Vegetal y Fotosíntesis Isla de la Cartuja, CSIC-Universidad de Sevilla. llobea@nu.ac.za

Biocontrol, or Biological Control, can be defined as the use of natural organisms, or genetically modified, genes or gene products, to reduce the effects of undesirable organisms to favour organisms useful to human, such as crops, trees, animals and beneficial microorganisms. This strategy of control is ecologically clean and compatible with different models of agriculture: organic, biological and IPM programmes.

The main antagonist used in disease control in Agriculture is the fungus *Trichoderma harzianum* Rifai, a low cost biocontrol agent that can establish itself in different pathosystems, has moderate effects on soil balance and does not harm beneficial organisms that contribute towards pathogen's control. This biocontrol agent has not harmful effects on humans, wild life and other beneficial organisms. *T. harzianum* is a safe and effective biocontrol agent in both natural and controlled environments that does not accumulate in the food chain and to which it has not been described resistance.

*Trichoderma* strains used as biocontrol agents can act: a) colonizing the soil and/or parts of the plant, occupying a physical space and avoiding the multiplication of the pathogens; b) producing cell wall degrading enzymes against the pathogens; c) producing antibiotics that can kill the pathogens; d) promoting the plant development and e) inducing the defensive mechanisms of the plant.

Antifungal formulations based on *Trichoderma* strains and proteins require, as in the case of chemical fungicides, a costly and sound registration process previous to their commercialization. For this reason, many of these biological products are being offered to the farmers under the category of fertilizers and other commercial products that are not tightly regulated, and, hence, they do not offer sufficient guarantee of quality and sanitary control. This fraud must be prosecuted since most of these wrongly registered formulations have not got a *Trichoderma* inoculum, shelflife or other properties stated in their label.

We have developed *Trichoderma* formulations against the main avocado root pathogens: *Phytophthora cinnamomi* and *Dematophora necatrix*.