



## A (Not) New Way to Cope with the Diseases

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The rising world population is getting agriculture even more intensive, with the use of fertilizers and products to pests and disease control. Due to the vast global information with the Internet, even more, people are looking for healthy products, more specifically organic fruits and vegetables. A problem present in the production is the occurrence of diseases in the field and post-harvest, getting production losses to the farmer and the seller. The most used way to cope with the diseases is the usage of chemical fungicides, since copper- and sulfur-based formulations until the novel synthetic compounds. These cannot be used on organic farms.

An alternative to disease control in organic farms is the use of Biological Control. There are fungus, bacteria, and yeasts that have potential against various diseases. The most used agent is bacteria, especially from the genus *Bacillus*, and various species have activity against diseases. The control can be by antibiosis, mycoparasitism, nutrient and space competition, prevention of colonization of host tissues, and induction of resistance in plants. There are many studies about the relationship between pathogen and biocontrol agents, but only a few of them get to the farmer and are applied in commercial fields.

One disadvantage of biocontrol agents compared to chemicals is that they do not have, or is not relevant, the curative power. Because of this, they have to be used as protectors, on a regular application schedule. But most farmers only think about the disease when it is already causing damage, and in some cases like this, probably the biocontrol agents will not save the crop.

The usage of biocontrol agents is raising year by year, and have great potential, however we still have to show the farmers that this

kind of control has its limitations, although it is a great way to reduce the use of chemical fungicides.

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