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IS THE EFFICACY OF BIOLOGICAL CONTROL AGAINST PLANT DISEASES LIKELY TO BE MORE DURABLE THAN THAT OF CHEMICAL PESTICIDES?

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A meta-analysis of the scientific literature was conducted to assess the potential for plant pathogens and plant pests to become resistant to biocontrol agents. Although many plant bioaggressors are known for their capacity to develop resistance to chemical pesticides or to overcome varietal resistance, only few studies have explored their ability to potentially overcome the effect of biocontrol agents. This presentation will be focused on plant diseases. The case of pests will be discussed in another presentation addressing the resistance of codling moth to *Cydia pomonella* Granulovirus (CpGV).

Reports on the effect of biocontrol agents on plant pathogens often consider only a single strain and one specific stage in the life cycle of the pathogen. However, among the available references analyzed in this review, some studies highlight differences in the sensitivity of various isolates of plant pathogens to biocontrol agents and the capacity of plant pathogens to adapt to biocontrol agents. Is it possible to link specific traits (of the pathogens or of the biocontrol agents) to the loss of effectiveness of biocontrol agents? Data are still too sparse to elaborate a general theory on the use of biocontrol agents in practice. This study highlights the necessity of proper management of these new products to avoid repeating the mistakes made with chemical pesticides.

Significant research efforts are still needed to acquire sufficient knowledge on the mode of action of biocontrol agents to optimize their use, to anticipate the potential failure of biological control and finally to integrate durability concerns in the screening procedure of new biocontrol agents and the careful management of their use once they become commercially available.





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