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The Study of the Antagonistic Effect of *Methylobacterium* Sp Vis-à-Vis *Pseudomonas Savastanoi*

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Context: Pathogenic bacteria cause many plant diseases; the severity of which can be mitigated by the associated non-pathogenic bacteria. The control of plant pathogens using biological control is more advantageous for the environment compared to chemical control.

The objective of this work is to investigate the in vitro antagonist effects of *Methylobacterium* sp against *Pseudomonas savastanoi*, the causative agent of tuberculosis in the olive tree.

Methods: Isolation and pre-identification of *Pseudomonas savastanoi* from an olive-infected tree (*Oleaeuropaea* L.), according to the EPPO (European and Mediterranean Plant Protection Organization) protocol.

The study of the antibacterial activity of *Methylobacterium* sp and *Pseudomonas Savastanoi* using the direct method of Fleming and al. (1975) and the indirect method of Barefoot and Klaenhammer (1983).

Results: The study of the in vitro antibacterial activity against *Pseudomonas Savastanoi* using the indirect method has shown a greater inhibitory activity than that of the direct method and the realization of a suitable indirect method allows us to suggest that the metabolites inhibiting the P *savastanoi* secreted by *Methylobacterium* sp are intracellular.

Conclusion: Biological control tests using *Methylobacterium* sp, to limit the incidence of P. savastanoi, are study worthy. These non-negligible antagonistic effects could join other methods of control, such aschemical or genetic.

Keywords: *Methylobacterium* sp, *Pseudomonas savastanoi*, olive, biological control.