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BIOCONTROL OF *NEOFABRAEA* SP. USING BACTERIA ISOLATED ON A MEDIUM SPECIFIC TO *BACILLUS* AND *PSEUDOMONAS* GENERA: AN INVESTIGATION OF ANTAGONISTIC PROPERTIES

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Bacillus sp. is a group of Gram-positive (Gram+) bacteria known for their ability to produce a wide range of secondary metabolites, including antimicrobial compounds. In this study, pure cultures of *Bacillus* sp. were isolated from soil collected from apple trees root zone using microbiological cultivation on Potato Dextrose Agar medium (PDA) and evaluating their antagonistic activity against *Neofabrea* sp. (synonym *Pezicula* sp.).

The obtained bacterial cultures were then grown on Trypticasein Soy LAB-AGAR (TSA), a specialized medium for the cultivation of bacteria belonging to the genera of *Bacillus* and *Pseudomonas*.

To evaluate the potential of the obtained isolates for biocontrol of plant pathogens, antagonism assays were carried out to investigate their ability to inhibit the growth of *Neofabrea* sp., a fungal pathogen that causes apples bull's eye rot (BER). It is a storage disease that can cause up to 50% of crop losses. The results showed that some strains of *Bacillus* sp. exhibited strong antagonistic activity against *Neofabrea* sp., suggesting their potential as biocontrol agents against this plant pathogen.

Overall, the results of this study suggest that *Bacillus* sp. can be a promising source of bioactive compounds with potential applications in sustainable agriculture, e.g. used in a biopreparation as an active ingredient. The isolation and characterization of *Bacillus* sp. strains with strong antagonistic activity against *Neofabrea* sp. can lead to the development of eco-friendly and effective biocontrol strategies. Further research is needed to develop effective biocontrol strategies for sustainable plant disease management.

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