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Isolation and characterization of *Trichoderma* sp. from apple tree soil with potential for biocontrol of *Neofabraea* sp.

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Trichoderma species have gained significant attention as biocontrol agents due to their antagonistic properties against various plant pathogens. In this study, strains of *Trichoderma* sp. were isolated from soil samples collected from apple orchards under six different ways of land cultivation. The aim was to investigate the antagonistic potential of *Trichoderma* isolates against *Neofabraea* sp., a common fungal pathogen that causes bull's eye rot (BER).

Isolation of *Trichoderma* spp. was carried out by sowing soil samples on *Trichoderma* Selective Medium (TSM) and utilizing necromass from *Neofabraea* sp. as a source of attraction for the antagonistic isolates. The isolated *Trichoderma* strains were then screened for their antagonistic activity against *Neofabraea* spp.

Results underscored the presence of multiple *Trichoderma* spp. strains with varying degrees of antagonistic potential against *Neofabraea* spp. The study sheds light on the influence of different way of land cultivation on the diversity and effectiveness of *Trichoderma* isolates. Furthermore, the utilization of TSM medium within *Neofabraea* necromass as isolation strategies emphasizes innovative approaches for cultivating the most potent antagonistic strains.

In conclusion, this research contributes to our understanding of *Trichoderma* spp. as a promising biocontrol agent against *Neofabraea* spp. infections in apple orchards. The diverse isolation techniques and subsequent characterization offer insights into harnessing *Trichoderma* spp. as beneficial fungi for sustainable and eco-friendly disease management strategies in orchard ecosystems.

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