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Molecular characterization of bacterial biocontrol agents and their chitinase genes from tea soil

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In tea, bacterial biocontrol agents *viz. Bacillus* and *Pseudomonas* and an enzyme like chitinase from these bacterial strains are used to control tea pests and pathogens. However, literature on molecular identification of the same is quite scarce. In this study, *Bacillus* and *Pseudomonas* strains isolated from tea soil samples, were systematically identified by 16S rRNA sequencing. Molecular characterization of bacteria was carried out to identify the species of different level chitinase producing bacteria and diversity among them. Further, chitinase gene was characterized from these bacteria to understand the gene diversity among different bacterial chitinase that has potential application in controlling the plant pests and pathogens. Sequence analysis of 16S rRNA and chitinase gene sequences was made among thirteen *Bacillus* and five *Pseudomonas* species submitted in NCBI Genbank.

Keywords: 16S rRNA, Chitinase producer, NCBI Genbank, Phylogenetic relationships, Tea pests