

## Isolation and characterization of plant growth promoting *Burkholderia* spp

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### ABSTRACT

In this study, a total of eight *Burkholderia* isolates obtained from rhizosphere soil of maize, cotton, rice, sugarcane, groundnut and soybean and tested for the N fixation, phosphate solubilisation and antagonistic activity against *Rhizoctonia solani*. All the eight isolates produced the band for the *nifH* gene in the polymerase chain reaction confirmed the presence of *nifH* gene. Among the 8 isolates, RMS1 produced clear halo zone around 7 mm on surface of HAP medium. CMS1, RMS1 and SMS1 are inhibited the growth of *Rhizoctonia solani* for 43, 40 and 35 per cent, respectively. An isolate RMS1 possessed all the three plant growth promoting traits *viz.*, higher phosphate solubilizing ability, antagonistic activity and presence of *nifH* gene selected for molecular characterization with amplifying and sequencing of 1.46 kb 16S rRNA gene. Based on the BLASTn homology it was found that 16S rRNA sequence of isolate RMS1 having 93 per cent identity with showed 97 per cent homology with *Burkholderia thailandensis*.

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