

PHOSPHATASE ACTIVITY OF *ASPERGILLUS NIGER* : A NATIVE TEA RHIZOSPHERE ISOLATE

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Phosphate solubilizing microbes are very important in any soil as well as in tea gardens. The isolates, viz. MM PSM10 (fungi) from a commercial tea estate of Upper Assam were used to study the enzyme activity. After screening of fourteen isolates from different locations MMPSM 10 was found to have phosphate solubilizing activity as evidenced by measuring the P -solubilization zone (3mm) in solid Pikovaskaya's medium after 4 days of incubation at 28°C ± 2°. The isolate recorded alkaline as well as acidic phosphatase activity. The experiment was conducted for 24, 48, 72 and 96 hour incubated cultures grown in nutrient broth at 30°C ± 2°. The Specific Activity was expressed as p-nitrophenol liberated (mM)/hr/mg of protein. MM PSM 10 (Aspergillus niger Code 1228.07 NCFI) revealed an increasing trend of alkaline phosphatase specific activity during its incubation period from initial 24 hours culture (2.66 ± 0.04) to 96 hours culture (5.24 ± 0.06). From the results MM PSM 10 proved to be an alternative for increased yield by solubilizing the bound phosphate, which may be present in soil or applied as superphosphate. Hence, the use of native isolate MM PSM 10 will improve the phosphate nutrition of the tea soil and plant in an economic and eco-friendly way.

Key words: Tea soils, Phosphate solubilizing microbes, Phosphatase Enzyme, Specific activity
