

Amylase producing efficiency of *Bacillus* species isolated from Jammu soil

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Now-a-days the new potential of using microorganisms as biotechnological sources of industrially relevant enzymes has stimulated renewed interest in the exploration of extracellular enzymatic activity in several microorganisms. In this study, our purpose was to isolate *Bacillus* bacteria that have the ability to secrete amylase and its production optimization with variation of pH and high temperature. Fifteen bacteria, isolated from mill disposal soil samples of Jammu were identified as *Bacillus* spp. on the basis of their growth on selective media i.e Mannitol Egg yolk agar base and biochemical tests (*viz.* positive in starch hydrolysis, gelatin liquefaction, simmon's citrate, casein hydrolysis and H₂S production test but negative in urease test). Amylase production was qualitatively detected by the disappearance of blue colour in the starch agar medium around the microbial colonies. Quantitative estimation of amylase activities were determined by DNS method at different pH and temperatures and the results revealed that highest amylase activity in *Bacillus* spp. was observed at pH 7.0 and at temperature between 40-60°C. The *Bacillus* spp. labeled as NBS-9 showed maximum amylase activity (2.851 μ mole maltose/min/mg protein) among the fifteen isolates and was considered as most efficient isolate for industrial application at high temperature.

Key words: *Bacillus* spp., amylase, temperature, pH
