

## **Effect of Nitrogen Source on Production of CMCase by *Bacillus megaterium* 1295S Isolated from Sewage Treatment Plants**

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**Abstract :** Cellulase-producing bacteria were isolated from wastewater and sludge, and identified as *Bacillus megaterium* 1295S, *Sporosarcina pasteurii* 586S, *Bacillus subtilis* 117S, *Burkholderia cepacia* 120S and *Staphylococcus xylosus* 222W. Among bacteria, *B. megaterium* 1295S was the best cellulase producer under the catabolic repression and was therefore selected to study the factors affecting cellulase production. The optimum conditions for cellulase production were observed in CMC-Yeast Extract (CYE) agar medium (pH 6.5) inoculated with 0.4 mL of bacterial culture and incubated at 45°C for 72 h. Twenty amino acids were introduced into the production medium as nitrogen source to investigate the production of cellulase in presence of amino acids in comparison to peptone (as an organic source) and sodium nitrate (as an inorganic source). The results found that the maximum production of cellulase was recorded at 50 ppm when L-hydroxy proline, L-arginine, glycine, L-histidine, L-leucine, DL-iso-leucine, DL- $\beta$ -phenylalanine were used as sole nitrogen sources and at 100 ppm when DL-threonine, L-ornithine 12.29, L-proline were used as sole nitrogen sources. The highest biomass yield was found when glycine 5 ppm and DL-serine 100 ppm used as a nitrogen source.

**Keywords :** CMCase, *Bacillus megaterium* 1295S, factors, amino acids

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