



**ENHANCED PRODUCTION OF AMYLASES FROM BACILLUS SPECIES USING
SUBMERGED FERMENTATION**

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ABSTRACT

A large number of bacterial alkaline amylase have application in different industrial sectors they are detergent industry, food industry, textile industry, paper industry. In the present study 8 bacterial isolates of were screened for amylase production nature. Isolate 08 showing maximum hydrolysis was tentatively named as Bacillus species based on cellular morphology. Isolate 08 was further used in the study to optimize the physiological-chemical conditions and was found to show optimum growth at 37°C, pH7 and stationary phase was obtained after 96 hours of incubation. After optimization of production media amylase production was carried out under submerged conditions in a Bioreactor (lark). Crude extract obtained after centrifugation of fermented broth was used to get the total activity (145.59U) of amylase by DNS assay.

Keywords- Amylase, Starch, Bioreactor, Fermentation, Enzyme activity.

INTRODUCTION

Enzymes are among the most important products obtained for human needs through microbial sources. A large number of industrial processes in the areas of industrial, environmental and food biotechnology utilize enzymes at some stage or other. Current developments in biotechnology are yielding new applications for enzymes (Ammounh, H *et al.*, 2012). The amylase have many applications in a wide variety of industries

such as food, fermentation, textile, paper, detergent, pharmaceutical and sugar industries (Garg, D. and Kaur, M. 2013). Amylases are enzymes that catalyze the hydrolysis of starch into short form of sugar composed of glucose unit. As *diastase*, amylase was the first enzyme to be discovered and isolated (by AnselmePayen in 1833). Bacteria, Fungi and some plants and animals also produce amylases. Amylase are among the most