

Optimization of Cellulase Production From The Microorganism Newly Isolated From Garden Soil

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Abstract

Cellulose, a major constituent of plant cell wall, is the most abundant biological polymer on earth. The use of various cellulolytic microorganisms for the bioconversion of cellulose into value added products has attracted a worldwide attention. Hence, the present work was aimed to isolate new cellulase producing microorganisms and further to investigate the effect of nutritional and process parameters on cellulase production from selected isolated culture. Out of several cellulase producing bacterial strains isolated during the study, *Bacillus amyloliquifaciens* isolate was found to be best for the production of cellulase enzyme. This isolate was then characterized for its morphological and biochemical characters. The effect of different parameters like carbon sources, nitrogen sources, temperature, inoculum age, inoculum size, agitation rate and incubation period was monitored with selected strain for cellulase production. The maximum cellulase production was recorded at 37°C at 24h. The maximum cellulase production was recorded at inoculum size and inoculum hour at 2.5% and 24 hr, respectively. The maximum cellulase production was recorded when agitation rate 150 rpm, incubation time was 48 hr. Cellulose and Peptone at 1% each were recorded to cause the maximum cellulase production.

Keywords:-Isolation; Bacillus; Cellulase; Cellulose.

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