ISOLATION OF CELLULOSE DEGRADING BACTERIA (CDB) FROM MANGROVE SOIL.

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ABSTRACT

ISOLATION OF CELLULOSE DEGRADING BACTERIA FROM MANGROVE SOIL

Cellulose is the most abundant component of plant biomass and potentially used for biofuel production. This bioconversion involve cellulase enzyme. Enzymatic hydrolysis by microorganisms is the most cost effective.This study is intended to isolate the potential cellulose degrading bacteria, to assess cellulolytic potential of cellulase and to optimize the growth condition of cellulose degrading bacteria. A total of five bacteria were isolated from mangrove soil using mineral salt medium broth containing carboxymethyl cellulose(CMC). All the five bacteria do not display any hydrolysis zone in Congo Red test. Whereas, the hydrolysis zone appeared when tested with Iodine test. The isolated bacteria namely Bacteria A, Bacteria B, Bacteria C, Bacteria D and Bacteria E were undergo pre-screen using dinitrosalicylic (DNS) method. Bacteria E show high constituents of cellulolytic potential of 0.187 μmol/ml. Optimization of cultural conditions for cellulase production by Bacteria E was carried out. Optimize cultural condition at the temperature of 37°C, pH 7 and 5 days of incubation period yielded 0.368 μmol/ml.