Production and partial purification of cellulase from *Aspergillus Niger.*

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ABSTRACT

Enzyme Cellulase (EC 3.2.1.4) producing microorganism was screened by carboxymethyl cellulose plate assay method and identified as *Aspergillus niger*. Different substrates were tested for cellulase production by solid state fermentation. The maximum production was found to be at 96 hr, 33°C and 4.0 for incubation period, temperature and pH respectively with wheat bran as substrate. An optimum inoculum size was 1ml (5×10^8/ml) with moisture content of 60%. Addition of inducers to the substrate enhanced the production of cellulase. The enzyme characterization was studied by different parameters such as temperature and pH. The enzyme was found to be stable between pH range 4.0 – 8.0 and temperature 30 – 70°C. The enzyme showed optimal activity at pH 4.8 and temperature of 50°C. An optimum carbon source was carboxymethyl cellulose and an optimum nitrogen source was peptone. The cellulase enzyme was concentrated and purified by ammonium sulfate precipitation and dialysis. The purified enzyme molecular mass was determined by SDS-PAGE as 40KDa. Data emphasized the possibility of the production and purification of cellulase for application under industrial scale.

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