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Utilization of Bio-wastes for Industrially Important Cellulase Production

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Abstract.

Cellulose is a linear polymer, made up of monomer subunits of glucose linked via β 1-4 glycosidic bond. The composition of cellulose is varying among different bio-wastes. Cellulases have wide range of applications in different industries and laboratories. Present work focuses on the factors for improvement of enzymatic hydrolysis of various agriculture wastes. The aim of our study was isolation and screening of cellulase producing fungi species from soil of vegetable waste dumping ground utilizing lignocellulosic waste such as rice husk, corn cob, millet husk, pineapple peel, banana peel etc. Different fungal strains from different genera were isolated and identified. Simultaneously the effects of different environmental factors such as pH, temperature and substrate concentration were monitored during the fermentation process on enzyme activity. The enzyme assay was carried out by using both Filter Paper Assay (FPase) and Carboxy Methyl Assay (CMase). Further purification and quantification of cellulase enzyme were determined using different chromatographic analysis.

Keywords:Cellulase, Bio-wastes, fungi Species, enzyme assay.