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Isolation of Amylase and Cellulase Producing Bacteria from Soil Sample of Dumpsite Area

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Abstract: *Amylase and cellulase are industrial enzymes that have wide application in food, textile, detergent, pharmaceutical industries. The present study aims at isolation of amylase and cellulase producing bacteria. A total of 20 bacteria were isolated from soil sample of dumpsite area collected from Patna region. Screening based on halo zone diameter, isolate IV (0.4mm) emerged as best amylase producer and isolate VII (0.5mm)as best cellulase producer.Both Isolate IV and VII were Gram +ve rods. Both gave positive test for urease hydrolysis, while isolate IV gave positive test for nitrate reduction and gelatin hydrolysis and isolate VII were negative for same. For proper identification of isolate further biochemical and genotypic characterization should be carried out for generic and species level identification.*

Keywords: Cellulose, Cellulases, CMCA, Starch, Amylases, SNA.

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Introduction:

Enzymes are biological catalyst, which assist numerous metabolic activities and help in maintaining and encouraging life. Amylases and cellulases are important industrial enzyme belonging to the class of hydrolases having wide industrial applications. Amylases are hydrolase that catalyze the hydrolysis of -1, 4 glycosidic bond of starch, sharing 25% of world enzyme market (Ikram et. al., 2012). While, cellulases catalyze the hydrolysis of β1,4 glycosidic bonds of cellulose, the most common organic compound on Earth (Beguin and Anbert, 1993, Verma et.al., 2012). They have wide industrial application in food, brewing, detergents, paper, textile, leather, pharmaceutical industries. Microorganisms represent the most common source of industrial enzymes because of their short life cycle, broad biochemical diversity, feasibility of mass culture and ease for genetic manipulation (Niehaus et. al., 1999). Bacteria are most preferred source of