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STUDIES ON OIL DEGRADATION POTENTIAL OF *BACILLUS MEGATERIUM*; CLONING AND EXPRESSION OF OIL DEGRADATION GENE INTO *E.COLI*

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ABSTRACT

Five Bacterial isolates MJAG1501, MJAG1502, MJAG1503, MJAG1504, and MJAG1505 were isolated from oil contaminated soil. Oil degradation potential of all the five isolates was evaluated by studying their growth and protein profile while they were inoculated Minimal Salt Media supplemented with 5% used engine oil for a period of 10 days. The isolate MJAG1505 showed maximum growth (Quantified by OD at 600nm and enumeration on Nutrient agar plates) throughout the incubation period and also concentration of protein in the flask containing MJAG1505 was found to be maximum throughout the incubation period thereby by giving an indication that the isolate was able to utilize the hydrocarbons present in used engine oil as a source of carbon and energy. Isolate MJAG1505 showed maximum oil degradation(45%) oil degradation potential of *E.coli*.(25%).and oil degradation potential of transformed *E.coli* (50%). after 10 days incubation period. The isolate was tentatively identified as *Bacillus megaterium* based on Bergey's Manual.

INTRODUCTION

Environmental pollution by petroleum hydrocarbons and its adverse effects are among the most ominous problems that the world is grappling today. Past century witnessed a global surge in oil pollution due to industrial development, urbanization and so forth. Microbial degradation is one of the foremost routes in the natural removal of these oil products from contaminated environments. However, since these compounds are largely recalcitrant, they are not readily degraded by microbes in nature.

A rational approach to decontaminating an environment loaded with petroleum derivatives is the adoption of procedures based mainly on the metabolic activities of