



Isolation of Engine Oil Degrading Microorganisms

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Microbial remediation of oil contaminated site is accomplished by diverse group of microorganisms known as petrophiles, particularly indigenous bacteria present in soil. Hydrocarbons have widespread occurrence in various ecosystems and the illegal dumping of used engine oil is an environmental hazard with global ramification. Thus it must be reduced, and for this, there is a need for isolation and screening of engine oil degrading microbes from soil. Inoculation of the serially diluted sample soil taken from Khushboo Auto traders boring road, Patna were done on Nutrient agar and Potato dextrose agar plates, for bacteria and fungi respectively. Then the screening of isolated bacteria and fungi on Bushnell-Haas broth and Czapek-Dox agar media containing 0.1%engine oil as a sole source of carbon was done, no fungus could be screened. Of the eleven isolates on NA five showed turbidity in the BH broth and screened as engine oil degrading bacteria, and identified as Flavobacterium sp, Moraxella sp, Pseudomonas sp and Streptococcus sp(moderate degraders) Bacillus sp(slow degrader) by Gram staining and several biochemical tests. Optimal oil concentration was found to be 1.0 %in Bushnell-Haas agar media. The isolated bacterial species can be used for in situ bioremediation of polluted sites as indigenous bacteria; also they can help environmental protection agencies for proper application of such agents.

Key words: Engine-oil, Bioremediation, Bushnell-Haas media, Flavobacterium sp, Bacillus sp, Moraxella sp, Pseudomonas sp, Streptococcus sp.