Vol.57, n.5: pp. 789-796, September-October 2014
http://dx.doi.org/10.1590/S1516-8913201402250
ISSN 1516-8913 Printed in Brazil

BRAZILIAN ARCHIVES OF
BIOLOGY AND TECHNOLOGY
AN INTERNATIONAL JOURNAL

Characterization of Diesel Degrading Bacterial Species from Contaminated Tropical Ecosystem

Obinna Chukwuemeka Nwinyi[1*], Ijeoma Akudo Kanu[1], Ayano Tunde[2], Kolawole Oluseyi Ajanaku[3]

[1]Microbiology Laboratory; Department of Biological Sciences; School of Natural and Applied Sciences; College of Science and Technology; Covenant University; Ota; Ogun State - Nigeria. [2] Department of Biological Sciences; Ajayi Crowther University; Oyo; Oyo State - Nigeria. [3]Central Research Laboratory; Department of Chemistry; School of Natural and Applied Sciences; College of Science and Technology; Covenant University; Ota; Ogun State - Nigeria

ABSTRACT

The bacterial diversity in a diesel contaminated tropical soil was investigated using diesel oxidation in gradient cultures dynamics (pH and OD) of the pure cultures. The diesel dependent growths of these isolates were assessed for 15 days by monitoring the gradient fluxes in the pH and Optical density OD of the media. Results showed an increase in OD as well as fluctuations in pH values. The mean OD data obtained was 0.515- 1.187 with pH of 6.95-7.2. From the morphological and biochemical characterization and comparison with respect to the standard references, the isolates S_1P_1, S_3P_3, S_2P_2, S_2P_1,and S_3P_2 were presumably the members of the genera Bacillus, Pseudomonas *and* Mycobacterium *species. From the study, it was apparent that the tropical ecosystems contained unique organisms with the ability to deal with diesel contamination.*

Key words: Diesel, Optical density, Turbidity, Tropical Ecosystem, bacterial strains, pH

Nwinyi O.C., Kanu I.A., Ayano T., Ajanaku K.O., (2014) Characterization of Diesel Degrading Bacterial Species from Contaminated Tropical Ecosystem. *Brazilian Archives of Biology and Technology* Vol 57(5): 789-796	The bacterial diversity in a diesel contaminated tropical soil was investigated using diesel oxidation in gradient cultures dynamics (pH and OD) of the pure cultures. The diesel dependent growths of these isolates were assessed for 15 days by monitoring the gradient fluxes in the pH and Optical density OD of the media	(IF = 0.452) (Science citation expanded/ Indexed in Thomson Reuters, Scopus and others)