

OCCURENCE AND CHARACTERISTICS OF HYDROCARBON-UTILIZING BACTERIA IN NIGERIAN SOILS CONTAMINATED WITH SPENT MOTOR OIL

Authors: OO Amund, AA Adebawale, EO Ugoji

Abstract

Soil samples were collected from four different oil-contaminated sites in Lagos, Nigeria, Enrichment of soil samples in a mineral salts medium containing SAE 40 motor oil as carbon source resulted in the isolation of eleven bacterial species. These organisms were identified as species of *Corynebacterium*, *Acinetobacter*, *Pseudomonas*, *Bacillus*, *Arthrobacter*, *Gemella*, *Flavobacterium* and *Micrococcus*. Substrate specificity tests showed that the organisms could utilize long chain n-alkanes including dodecane, tetradecane and hexadecane. Some species grew on some aromatic hydrocarbons, such as naphthalene, anthracene and phenanthrene. However, all the isolates grew on crude oil as well as motor oil. The growth of a *Pseudomonas* sp on motor oil resulted in the extensive degradation of the oil and in the synthesis of a new compound.

Keywords: Hydrocarbons, Bacteria, Soil

Published on 1987