

EVALUATION OF THE EFFECT OF CRUDE OIL AND KEROSENE ON SOIL MICROBIAL POPULATION

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ABSTRACT

The study was undertaken to investigate the effect of soil contamination with crude oil and kerosene on microbial population and biodiversity. The effects of crude oil and kerosene on soil microbial population were investigated by contaminating soils at five loading rates (1.0, 5.0, 10, 15, 20 %) volume of oil/weight of soil and monitoring activity at 7 days interval. The highest level of average fungal and bacterial count in crude oil contaminated soil was at 21 days, the average count of the fungal count was 126×10^4 cfu /g of soil, while that of bacterial was 143×10^6 cfu/g of soil. The highest level of average fungal and bacterial count in kerosene contaminated soil was at 14 days, the average fungal count was 102×10^4 cfu /g of soil while that of bacterial count was 136×10^6 cfu/g of soil. Analysis of variance of the average count of fungi and bacteria showed a high significant difference between the control and the oil treated soils at $p < 0.05$ level. Species of twelve fungal and eight bacterial genera were isolated from the soils. The order of fungal and bacterial is a reverse of the decreasing order of fungal diversity of these same soils. This showed that higher concentrations of crude oil have an adverse effect on fungal diversity while enhancing the population of fewer fungi.

KEYWORDS: Crude Oil, Kerosene, Bacteria, Fungi, Pollution

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