

Degradation of total petroleum hydrocarbon in petroleum products-contaminated soil using pig dung

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Abstract

In This study determined effect of pig dung on the degradation of total petroleum hydrocarbon in petroleum products-contaminated soil. Top soil (0-15 cm depth) was collected from Teaching and Research Farm, Federal University of Agriculture Abeokuta, Nigeria. One kilogram of the soil was measured into nine containers and contaminated with 10 % mixture of gasoline and diesel. Pig Dung (PD) was mixed with the soil at the rate of 0, 50 and 100 g kg⁻¹ soil in triplicate and the containers were arranged in a Completely Randomized Design. Soil samples were taken from each container at 21 and 42 days for Hydrocarbon Utilizing Bacteria (HUB) and Total Petroleum Hydrocarbon (TPH) determination using standard methods. Collected data were subjected to descriptive and inferential statistics. The HUB species identified were *Bacillus*, *Staphylococcus*, *Escherichia* and *Klebsiella*. The TPH (mg kg⁻¹) of the soil before PD application was 83.55±0.22. After the amendments (at 0, 50 and 100 g kg⁻¹), values were 63.24±0.25, 50.09±0.64, 39.56±0.15 and 49.72±1.30, 34.51±0.56, 16.89±0.36 for 21 and 42 days respectively. Pig dung enhanced degradation of total petroleum hydrocarbon in the petroleum products-contaminated soil.