

**PHYTOREMEDIATION POTENTIAL OF LEMON GRASS (CYMBOPOGON CITRATUS)
FOR PETROLEUM HYDROCARBONS IN SOIL**

Iheoma M. Adekunle*
Olukayode Bambose
Oluwatoyin R Afolabi
Kabirat I. Sadiq

University of Agriculture
Department of Environmental Management & Toxicology
Abeokuta, Ogun State, Nigeria
Voice: +234 (0) 0803 4496 201
imkunle@yahoo.com

Nigeria, being an oil producing country is faced with petroleum hydrocarbon release in soil without a cost effective and eco-friendly remediation procedure. Study investigated both natural and enhanced phytoremediation of total petroleum hydrocarbons (TPH) in soils using a common plant found in the environment namely lemon grass (*Cymbopogon citratus*), an aromatic grass, in screen house experiments. Enhancement was achieved using composted organic wastes and nanomaterials produced from the compost. TPH in soil and *C.citratus* were determined using UV-visible spectroscopy in dichloromethane extract and hydrocarbon composition identified using chromatographic technique. Changes in soil TPH, pH, heavy metal (Pb, Cu, Cd and Zn) levels, electrical conductivity (EC), temperature, total organic carbon (TOC), total organic matter (OM) contents, total microbial population and species composition during the remediation period were evaluated using standard procedures. Soil restoration was assessed by plant bioassay experiments using cowpea (*Vigna unguiculata*), corn (*Zea mays* L.) and fluted pumpkin (*Telfairia occidentalis*) as indicator crops. Results showed that the TPH in soils adversely affected the microbial community and rendered the soils phytotoxic to the three crops but phytoremediation reduced TPH by up to 76% and improved crop productivity potential of the soils.

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