Biotechnology-2013

OMICS Group Conferences
Accelerating Scientific Discovery

4th World Congress on Biotechnology

September 23-25, 2013 Raleigh-North Carolina, USA

Effect of oil on phytoremediation of PCB co-contamination in transformer oil using *Chromolaena odorata*

R. O. Anyasi* & H. I. Atagana

University of South Africa, South Africa

41525981@mylife.unisa.ac.za

Abstract

This study entails the greenhouse assessment of the effect of oil on the ability of *Chromolaena odorata* to remove PCB from soil treated with transformer oil co-contaminated with Aroclor 1260. *Chromolaena odorata* plants were transplanted into one kilogram of soil contained in 1L pots differently containing 100, 200, and 500ml of transformer oil (T/O), co-contaminated with 100ppm of Aroclor. Treatment was done in two microcosms and were monitored, and watered appropriately. *C. odorata* growth was differently affected by the different concentrations of transformer oil which varies with concentration. At the end of six weeks of growth, plants showed diminished effect in T/O amended soil to the parameters tested. Plants size was increased by 1.4, 0.46 and -1.0% in direct treatment and 17.01, 6.09 and 1.08% in soil culture at the 100, 200 and 500 ppm respectively. Untreated control showed 43.07% increase. Inhibition of oil to other growth parameters ware severely pronounced in the leaf numbers and root length. Slight PCB recovery was observed in the root tissues of *C. odorata* but the plant caused a high reduction of 66.6, 53.2, 41.5% and 77.3, 74.7, 58.8% of soil PCB at both treatments with their respective concentration of oil. However, unplanted control was reduced by 21.4 and 16.7% in the two treatments at 100ppm of oil. This study has shown that with improved agronomic practices, there is possibility of phytoremediation of soil PCB from PCB contained transformer oil contaminated soil using *Chromolaena odorata,* hence should be optimized in the field

Biography

Raymond Oriebe Anyasi has an MSc in Environmental Science from the University of South Africa, and is currently busy with his doctoral study at the same University with study involving the preparation of transgenic using indigenous weed for phytoremediation of organics in the soil, he has various publications in a reputable journals.