

Assessment of Organochlorine Pesticides Residues in Higher Plants from Oil Exploration Areas of Niger Delta, Nigeria

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Abstract

The concentrations and distributions of organochlorine pesticides (OCPs) in some higher plant samples collected from oil exploration areas of the Niger Delta, Nigeria were examined. The concentrations of $\Sigma(25)$ OCP ranged from 82 to 424, 44 to 200, 34 to 358, 33 to 106 and 16 to 75 ng/g in Olomoro, Oginni, Uzere, Irri and Calabar plants, respectively. The compositional profiles of the analysed OCPs in most of the plants showed no fresh inputs in the area. The OCPs detected in the samples could have resulted from pesticide usage for intense farming activities cum the use of pesticides to control household pests and insects in the area. Drilling fluids and corrosion inhibitors used in petroleum explorations also have chlorinated compounds as additives thereby serving as potential sources of OCPs. Among the studied plants, elephant grass showed high bioaccumulation and phytoremediation potentials of OCPs. The Σ HCH concentrations exceeded the allowable daily intake limit thereby serving as potential threat to humans.

Highlights

- ▶ Σ_{25} OCP ranged from 16 to 424 ng/g.
- ▶ OCPs resulted from intense farming activities.
- ▶ OCPs also from household pesticides usage
- ▶ No fresh DDTs inputs in the area.
- ▶ Elephant grass has OCPs remediation potentials

Keywords: Organochlorinepesticides; Higherplant; Farming activity; Drilling fluid; Phytoremediation; Niger Delta
