



Phytoremediation of Heavy Metals Spiked Soil by *Polyscias fruticose*

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<http://dx.doi.org/10.13005/ojc/350135>

(Received: November 24, 2018; Accepted: January 10, 2019)

ABSTRACT

This study was to assess the phytoremediation potential of *Polyscias fruticose* in the removal of heavy metals from spiked soil. *P. fruticose* cuttings were transplanted then grown on 2.00 kg soil spiked with several heavy metals in polyethylene bags. The experiment was conducted for 300 days and concentrations of heavy metals in plant and soil over the growth period were determined. Appreciable concentrations of heavy metals in *P. fruticose* parts were obtained. The indices used to show the ease of heavy metals uptake and translocation indicated that Co, Cr, Mn, Ni and Pb displayed the greatest ease of absorption while Zn, Fe and Cu were accumulated in the root but not translocated to the shoot. The results obtained shows that this study pioneered the use of *P. fruticose* in the phytoremediation of several heavy metals spiked soil at a greenhouse level.

Keywords: Heavy metal, Phytoremediation, *Polyscias fruticose*, Phytoextraction, Spike, Bio-concentration factor.

INTRODUCTION

The world industrial activities, such as electroplating, fertilizer, municipal solid waste, smelting, gas exhaust, pesticides, fuel production, iron ores, energy production and mining have a large contribution in the release of significant amounts

of toxic compounds into the biosphere, among which are trace heavy metals¹. Human activities, urbanization and industrial development discharge harmful wastes into the environment, such as soil, water and air. These harmful wastes are classified as contaminants, and their outcomes are harmful and toxic to the soil, water, air, human, animals,

