**CHRISLAND UNIVERSITY**

**BIOREMEDIATION OF HEAVY METALS USING FLEURYA AESTUANS**

**(WEST INDIAN WOOD NETTLE) WITH FUNGI**

**(SUNMOLA BASIRAT OLUWABUSAYO)**

**ABSTRACT**

Heavy metal polluted soil caused by pesticides and fertilizer, industrial pollution, atmospheric deposition and sewage irrigation has a harmful effect on the environment. Heavy metals are difficult to completely clean up, thereby, threatening human health and the environment. The chemical, physical and conventional approaches to remediate polluted soils are usually expensive and not eco-friendly. This study was designed to determine the ability of fungi and Fluerya Aestuans remediate selected heavy metals from simulated soil**.** Soil analysis was done in part per million (ppm) before the soil samples were spiked with heavy metals. Fluerya Aestuans were grown separately on fifteen soil samples of 5.5 kg each. Three replicates of the soil samples were simulated with 10g/kg each of Cadmium (Cd), Copper (Cu), Lead (Pb) and all heavy metals (Ahm). They were then used in assessing the phytoextraction capability of Fluerya Aestuans control experiment was equally set up using soil sample without heavy metals. Fungal species were isolated from soil samples simulated with Pb, Cu, Cd, Ahm and the control group. They were subjected to screening for their tolerance to selected heavy metals using spectrophotometric method. Fluerya Aestuans II was the most tolerant fungal isolate and was used as a bioremediating agent. Soil analysis was also carried out after the experiment in ppm in which plant biomass was assessed. Heavy metal concentration in roots, shoots and soil samples was analysed after harvest to determine bioaccumulation. The result revealed that Fluerya Aestuans and Fluerya Aestuans combination is good for remediating heavy metal polluted soils.