

**PHYTOREMEDIATION OF HEAVY METAL (COPPER AND
LEAD) USING *Impatiens balsamina* ASSOCIATED WITH
Pseudomonas sp.**

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ABSTRACT

PHYTOREMEDIATION OF HEAVY METAL (COPPER AND LEAD) USING *Impatiens balsamina* ASSOCIATED WITH *Pseudomonas* sp.

Phytoremediation is a process to treat heavy metal contaminated soil by plant. Some of phytoremediation process used bacteria to help the removal of heavy metal from contaminated soil. The objective of this study is to determine the tolerance concentration (MIC value) of *Pseudomonas* sp. towards heavy metal and to measure phytoremediation process by *Pseudomonas* sp. bacteria with *Impatiens balsamina* plant. This studied covered from enrichment of *Pseudomonas* sp. in nutrient agar with the present of copper (Cu) and Lead (Pb). Analysis were carried out using three types of soil treatment samples includes control soil, heavy metal soil and heavy metal with 10% inoculum *Pseudomonas* sp. soil. All samples were analysed by using Atomic Absorption Spectroscopy (AAS) after 14 days phytoremediation process. From Minimum Inhibitory Concentration (MIC) method, it was found that *Pseudomonas* sp. can tolerate and survive with 90 ppm of copper (Cu) and 300 ppm of lead (Pb). Based on the results, the highest removal of heavy metal were done by using *Impatiens balsamina* only which 29.41 % were for copper (Cu) and 49.24 % for lead (Pb). But, in the present of bacteria, *Pseudomonas* sp. was unable to improve removal of heavy metal (Cu: 14.53% and Pb: 33.50%). Therefore, the plant itself has the potential to remove heavy metal from contaminated soil.