

Title Phyto remediation of Heavy Metals in Contaminated Soil at Disposal Area
: A Case Study in Nai Muang Municipality, Pichai District, Uttaradit Province.
Author Miss. Supatra Iamnak
Advisor Asst Prof. Dr. Suksaman Sangyoka

Abstract

This study aimed to treat heavy metals; lead, copper, cadmium, zinc and iron in soil contaminated from waste disposal area of Nai-Muang Municipality, Pichai District, Uttaradit Province. The soil samples were collected from the garbage disposal. The findings showed the soil contaminated with lead, copper, cadmium, zinc and iron was 235.94, 271.55, 18.06, 602.06 and 3,863.61 mg / kg. The laboratory scale study was compared the ability of heavy metals treatment using three types of plants i.e. marigold, eggplant and vetiver. The seeds of these plants were cultured for 3 weeks before growing in pots with a diameter of 8 inches. The soil samples were taken for the determination of heavy metals every 7 days for 12 weeks, then harvested the plants to be analyzed for heavy metals accumulated in various parts of the plant. The results showed that the amounts of lead, copper, cadmium, zinc and iron in the treatment of marigold decreased 45.81%, 19.96%, 47.54%, 50.90% and 46.69%, in eggplant 20.67%, 50.14%, 71.76%, 51.59% and 49.29%, and in vetiver 14.62%, 45.12%, 45.09%, 51.37% and 50.73% respectively.

Marigold has the best property in healing cadmium, zinc, iron, copper and lead respectively. Eggplant has the best property in healing iron, zinc, copper, cadmium and lead respectively, while vetiver has the best property in healing zinc, iron, copper, cadmium and lead respectively. For heavy metal accumulation in different parts of the plants to accumulate 5 heavy metal types, it is likely to be similar. The maximum heavy metal accumulation in the roots, followed by leaves, stems and flowers / fruit, respectively. In the presence of the additive, the addition of chelating agent or EDTA helped to promote phytoremediation of heavy metals.

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Student's Signature.....

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Co-Advisor's Signature.....