

**CASE STUDY OF PHYTOREMEDIATION
OF HEAVY METAL BY USING VETIVER GRASS (*VETIVERIA
ZIZANOIDES*)**

MOHAMAD HELMI BIN MAT GHANI

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Fulfilment of the Requirements for
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Universiti Teknologi MARA**

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DECLARATION

This Final Year Project is a partial fulfilment of the requirements for Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

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ABSTRACT

CASE STUDY OF PHYTOREMEDIATION OF HEAVY METAL BY USING VETIVER GRASS (*VETIVERIA ZIZANOIDES*)

Enhancement of geologic and anthropogenic activities cause existing of heavy metal become a major environment concern across the world nowadays. The severe release of heavy metals into the soil cause long-lasting effects on the ecosystem as they cannot be broken down into non-toxic forms. Phytoremediation is a cost effective green technology applicable for environmental conservation. Successful of phytoremediation rely on various factors such as behavior of plant, uptake level of both organic and inorganic pollutants. Vetiver Grass (*Vetiveria zizanioides*) has great potential as a means for phytoremediation because of its extraordinary features. The aim of the study is to determine the availability of heavy metal in Vetiver Grass and soil, and relationship between the plant and soil. The study was conducted in a greenhouse to provide sufficient sunlight for the plants, yet sheltered from the rain. This study consist one factor completely random block design whereby the concentration of synthetic mixture of Zn (treatment) were set at five different levels (control, 250 ppm, 450 ppm, 750 ppm, 950 ppm) based on soil toxicity level adapted with tolerance range of Vetiver Grass to that toxicity. The concentration of Cu and Fe in soil was set as parameters. Throughout the experiment, none of Zn and Fe accumulated in plants except Cu in one month grows. The results have shown that there were statistically significant difference between available Zn before and after planting of Vetiver Grass and treatments (p value: 0.006).Based on this study, it could increase the knowledge on pollutant uptake mechanism and accumulation of heavy metal under different analytical conditions.

Keywords: heavy metal, Vetiver Grass, accumulation