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Project On

**DESIGN AND FABRICATION OF AGRO WASTE
ENHANCED EFFLUENT TREATMENT UNIT**

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Submitted By

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**2SD08CH008
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VIII Semester, B.E Academic year 2011-2012

ABSTRACT

Excessive release of heavy metals into the environment due to industrialization and urbanization has posed a great problem worldwide. Today, with the rapidly increasing urban population and water resources becoming scarcer, there is a strong need to reconsider our consumption patterns and the way we use our water resources. The release of heavy metals into the environment is a worldwide major concern. Different studies have demonstrated that natural agents have a high removal capacity for divalent heavy metal ions. Agricultural wastes are natural adsorbent and in comparison with others, has a very low price. In this study, the removal of heavy metals (Fe, Pb and Zn) from Tata Marcopolo, Dharwad effluent was investigated in batch condition. Column studies were also performed on laboratory simulated effluent. Fe, Pb and Zn measurement in samples were done with atomic absorption equipment. The effect of different agriculture adsorbents and the amount of adsorbent was determined. This study shows that the adsorption process follows the adsorption Freundlich Isotherm. The amount of adsorbent has a great role in the adsorption rate and adsorption rate increased as amount of adsorbent increased. In the study, it was observed that Bagasse had highest metal adsorption efficiency for Fe, sawdust had moderate metal adsorption efficiency for all metals, rice husk had highest metal adsorption efficiency for Pb, tea waste had highest metal adsorption efficiency for Zn. Based on efficiency of each adsorbent, fixed bed column was fabricated to remove heavy metals from effluent.