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KEY WORD : LEAD /*Typha augustifolia* L. / RICE STRAW

JANCHAI AUNGUDORNPUKDEE : LEAD REMOVAL FROM BATTERY FACTORY WASTEWATER BY USING *Typha augustifolia* L. AND RICE STRAW. THESIS ADVISOR : KRISANA TEANKAPRASITH , M.S. (Env. Health) , KOMOL SIVABORVORN , Dr.P.H. (Env. Health Science) AND UDOMSAK KONGMUANG , M.S. (Env. Eng.). 99 p. ISBN 974-589-538-5

The objectives of this study are to determine the efficiency of *Typha augustifolia* L. and Rice straw in removing lead from battery factory wastewater by column filtration. *Typha augustifolia* L. and Rice straw were treated with 37% Formaldehyde and Sulfuric acid 0.2 N. Wastewater was prepared at 2 concentration levels, 8 and 15 mg/l. The pH was adjusted to over 5. Continuous wastewater at flow rates of 7 and 14 ml/min. were passed through columns with 30 or 60 cm. of bed depth respectively. The filtrates were collected every 2 hours for 12 hours.

The results show that as the flow rate increases the efficiency of removal decreases. As the bed depth increases the efficiency of removal increases. As the initial concentration of lead increases the efficiency of removal decreases. It is also found that the efficiency of *Typha augustifolia* L. is better than Rice straw.

The highest efficiency of *Typha augustifolia* L. filtration in this study was with lead initial concentration of 8 mg/l, flow rate of 7 ml/min and bed depth of 60 cms. During the first 2 hours, 99.94% of lead was removed and after 12 hours, 99.41% of lead was removed. The filtrates had a lead content of 0.047 mg/l. When initial lead concentration was 15 mg/l, flow rate of 7 ml/min and bed depth of 60 cms, after 12 hours, 99.10% of lead was removed. The filtrates had a lead content of 0.135 mg/l. This shows that when initial lead concentration is 8 mg/l, the efficiency is better than when initial lead concentration is 15 mg/l, but the lead content in filtrates under both conditions is less than the industrial wastewater standard (lead < 0.2 mg/l.). Therefore the *Typha augustifolia* L. can be applied in removing lead from battery factory wastewater.