Jeerajan Janngam 2011**:** Phytoremediation : Vetiver Grass in Remediation of Soil Contaminated with Trichloroethylene. Master of Science (Environmental Technology and Management), Major Field: Environmental Technology and Management, Department of Environmental Science. Thesis Advisor: Associate Professor Patana Anurakpongsatorn, D.Tech.Sc. 84 pages

Trichloroethylene (TCE) is chlorinated hydrocarbon which used in degreasing oil and grease from process products. It was found that this chemical was contaminated in environmental, soil and water around industrial area. Soil was collected from Pratum Thani province which had TCE higher than the standard set by Ministry of Industry. Four ecotypes of vetiver grass (*Vetiveria zizanioides*) were used for phytoremediation including Songkla 3, Sri Lanka, Kamphaeng Phet2 and Surat Thani. All ecotypes grew up and the survival rate was 100% after planting for 1 month. Surat Thani had the most number of leaves (6.67±0.58 leaves per plant). Songkhlar3 had the longest shoots followed by Sri Lanka (6.67±0.29 and 5.33±0.76 cm). Songkla 3 and Sri Lanka had the longest leaves (40.57±1.39 and 39.30±5.88 cm). However, there were no statistical differences ($p>0.05$) in sprouts quantity and leaves width among the 4 ecotypes. Songkhlar 3 and Sri Lanka were selected for further experiment. Selected vetiver grass was planted in contaminated soil mixed with materials including coconut husk chips : soil : manure in ratio 3:2:1 by weight. TCE was higher accumulated in leaves than shoots and roots (41.66, 36.99 and 21.35%). In control group, 2.49% of TCE remained in mixed materials and 97.51% was disappeared from the system. Comparing with the test group, planting with Songkhlar 3 had 2.02% of TCE remained in mixed materials, 5.74% TCE left in plant parts and 92.24% disappeared from the system. Sri Lanka test group had the same trend as Songkhlar 3, about 2.25% of TCE still remained in mixed materials, 5.61% was in the plant parts and 92.14% disappeared from the system. Since, this experiment was considered only TCE, loss of TCE in the system might be occurred through volatilization, transformed into others compounds by microbial or plant activities. The results of this research can be benefit in alternatively applied to the existing areas contaminated with TCE.

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