Sairung Kuymoungkam 2013: Formaldehyde Removal by Adsorption with *Cyperus Corymbosus Rottb* as Growing-Materials in Grass Filtration Treatment System and Constructed Wetland. Master of Science (Environmental Science), Major Field: Environmental Science, Department of Environmental Science. Thesis Advisor: Associate Professor Kanita Tungkananuruk, M.Sc. 97 pages.

The objective of this research was to study the efficiency of dried *Cyperus Corymbosus Rottb* and *Cyperus Corymbosus Rottb* charcoal as adsorbent and growing materials in the grass filtration treatment system and constructed wetland for removal of formaldehyde from wastewater. From batch experiment, by using 100 mL of the synthetic wastewater contained with formaldehyde 20 mg/L, it has been found that at 45 min removal time the percent removal form dried *Cyperus Corymbosus Rottb* 5 g and *Cyperus Corymbosus Rottb* charcoal 6 g was 31.5 and 32.50 respectively. Therefore, *Cyperus Corymbosus Rottb* charcoal were appropriate for growing materials in the grass filtration treatment system and Constructed wetland. Furthermore, the gravity continuous flow experiment was investigated by using glass column which was packed with growing material as the grass filtration system of The King's Royally Initiated La em Phak Bia Environmental Research and Development Project (LERD Project). The results demonstrated that the optimum by weight ratio of *Cyperus Corymbosus Rottb* charcoal to soil was 1:60, and the removal performance of formaldehyde in the synthetic waste water was 97.93%. In addition, the filtrated lysimeter technique was carried out in square plastic tank with size 51x51x54 cm that containing the growing material layer as the continuous flow experiment with growing *Cyperus Corymbosus Rottb*. Then the synthetic wastewater was treated as the grass filtration treatment system and constructed wetland of LERD Project. The results demonstrated formaldehyde removed in grass filtration was 96.35 % and constructed wetland was 37.88 %.

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