

Tanyalak Kerdsap 2014: The Study of Changing of Nitrogen Content ($\text{NH}_3\text{-N}$, $\text{NO}_3^-\text{-N}$ and TKN) in Treated Wastewater by Grass Filtration System with Long Root Plant of The King's Royally Initiated Laem Phak Bia Environmental Research and Development Project. Master of Science (Environmental Science), Major Field: Environmental Science, Department of Environmental Science. Thesis Advisor: Associate Professor Kanita Tungkananuruk, M.Sc. 108 pages.

This research is aimed to study the effecting factors of the weather period, type of long root plants and the distance of wastewater which passed through the each plant plot on the treatment of nitrogen by the grass filtration system of The King's Royally Initiated Laem Phak Bia Environmental Research and Development Project. The concentration of ammonia-nitrogen ($\text{NH}_3\text{-N}$), nitrate-nitrogen ($\text{NO}_3^-\text{-N}$) and total Kjeldahl nitrogen (TKN) in influent, effluent and water sample at 15 collection points on each plot were determined. The results revealed that the average ammonia-nitrogen and total Kjeldahl nitrogen concentration in influent exceeded the standard level of 0.5 and 20 mg/L respectively at both periods (wet and dry). There was no significant different of the ammonia-nitrogen , nitrate-nitrogen and total Kjeldahl nitrogen concentration at the different period and distance which wastewater pass the each plant plot. *Typha angustifolia* had the highest removal of nitrogen followed by *Vetiveria zizanioides* and *Cyperus alternifolius* respectively. The discharge from grass filtration system containing nitrogen in three forms met the effluent quality standards. Therefore, the grass filtration system could be used in simultaneous removal of ammonia-nitrogen , nitrate-nitrogen and total Kjeldahl nitrogen in domestic wastewater

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