

Darin Saetang 2008: Using Vetiver for Dairy Wastewater Treatment at Kasetsart University. Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Associate Professor Sombun Techapinyawat, Ph.D. 118 pages.

Three vetiver grass (*Vetiveria zizanioides* L. Nash.) ecotypes, i.e. Sri Lanka, Songkhla 3 and Surat Thani were used to treat dairy wastewater at Kasetsart University by hydroponic growth in the experimental block container. Sri Lanka ecotype was found to absorb highest amount of nitrogen in shoots and roots at 318.56 and 220.78 mg/plant, respectively, as well as highest phosphorus in shoots and roots at 10.52 and 16.48 mg/plant, respectively. Upon alleviating the most damaging factors (total nitrogen, total phosphorus, BOD, and dissolved oxygen) contributed to this type of wastewater, Sri Lanka ecotype was highly effective in reducing total phosphorus at 68.01%. Songkhla 3 ecotype could reduce BOD at 74.82%, increasing dissolved oxygen at 76.76%, while Surat Thani ecotype could reduce total nitrogen at 79.28%. Further treatment of the wastewater through the actual growing field of vetiver grass could not achieve a comparable result. Removal of the damaging factors was a lot lower. Sri Lanka could only reduce total phosphorus at 24.16%, BOD at 40.07%, increase dissolved oxygen at 36.37%, while Songkla 3 could reduce total nitrogen at only 38.64%. However, considering the overall results, Sri Lanka was found to be the best and most effective choice to treat dairy wastewater.

Darin Saetang
Student's signature

Sombun Techapinyawat 29 / May / 08
Thesis Advisor's signature