

Ratsuda Vithana 2008: Influence of Phetchaburi Municipal Wastewater on Quality of 3 Forage Grasses in the Alternated Flooding and Drying Soil and Plant System. Master of Science (Environmental Science), Major Field: Environmental Science, Collage of Environment.
Thesis Advisor: Associate Professor Paiboon Prabuddham, Ph.D. 154 pages.

In order to prove that organic substances in the municipal waste water which can be treated in the system of alternating flooding (5 days) of previously and completely dried loamy soil and drying (2 days) cycles and plant can promote growth, yield and roughage quality of 5 days flooding tolerant forage grasses, a Spolt Plot Design experiment, having Phetchaburi Municipal Wastewater (W_1) and irrigation water (W_2) as mainplot and 3 suitable grasses: *Leptochloa fusca* (L.) Kunth al (P_1), *Paspalum. Ubon* (P_2) and *Cynodon plectostachyus* (P_3) as subplots in 3 blocks, has been carried out. Plant parameters studied were: height, fresh and dry yields, water contents in both fresh and dry matter, the contents of protein, fiber, fat, ash, Ca, P, Fe, Cd, Pb and also protein yield at 30, 45 and 60 days after water treatments. To avoid unfaired chance from plant nutrient absorption soil of nodes after 30 days in the 1m.pots used of P_3 which is a creeping grass, 9.6 gN/pot of ureas was topdressed in all pots. These are the summarized results;

Waste water statistically improved almost all parameters at 30 days studied but also increased the Cd and Pb contents in the 3 plants observation dates;

Urea topdressing improved roughage quality of grasses in almost all W_2 pots to non significant levels but that some of W_1 pots were still better in the yields, water contents, contents of lipid, Ca, P and Fe at 60 days;

Pure effect of subplots were significant in most indicators and among the grasses, P_3 were the best in most parameters;

The Cd and Pb contents increased in W_1 were still below the toxic limits.

Ratsuda Vithana

Student's signature

Paiboon P.

Thesis Advisor's signature

31 / Mar / 2008