

Supattra Chowsuan 2014: Effect of Ethanol Plant Wastewater Treated by Upflow Anaerobic Sludge Blanket (UASB) on Sugar Cane and Soil Microorganisms. Master of Science (Environmental Science), Major Field: Environmental Science, Department of Environmental Science. Thesis Advisor: Miss Sujinna Kannasut, Ph.D. 113 pages.

Aims of this research were to study wastewater properties treated by Upflow Anaerobic Sludge Blanket (UASB). There were investigated pH, EC, OM, including chemical properties of Total P₂O₅, Total K₂O, Cd, Pb, Cr and Cd, were found in proper standard. BOD, COD and total solids quantitative analysis were showed that high quantity in UASB wastewater, meanwhile, coliform concentration was determined as 749.5 MPN/100ml and faecal coliform bacteria was 199 MPN/100ml.

Physical and biological properties of soil also were studied such as; pH, EC, OM, Available P, Exchangeable K and CEC. Result of chemical soil properties analysis of before and after planted soil were significant different with 95% confidence. Plate count method with Nutrient Agar (NA) and Potato Dextrose Agar (PDA) was used to study about effect of waste water irrigation on biological soil properties. Both of before and after planted soil, the result showed that microorganisms volume in soil was not statistical difference when waste water was irrigated in different volume. Sugarcane growths were studied such as tillering length, stalk diameter, C.C.S (%), sweetness (degree brix) and stalk weight (gram). This study founded that sugarcane was very good growing after irrigated by anaerobic waste water treatment as with statistically significant at 95% confidence.

Student's signature

Thesis Advisor's signature