: MAJOR BIOTECHNOLOGY
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JERAPONG INJORHOR : ACTIVITY TESTS OF FULL - SCALE UASB SLUDGES DURING START-UP. THESIS ADVISOR : DR. SUMETH CHAVADEJ, PH.D, DR. PIENPAK TASAKORN, PH.D. 138 pp. ISBN 974-584-329-6

The activity tests of full-scale UASB sludges during start-up was carried out at the distillery plant in Uttaradit province. The sludges taken from various heights of the UASB reactor which was operated under different COD loadings were determined for the sludge activity tests. It was found that both biogas production rate and biogas yield increased when the organic loading increased the system had the maximum value of biogas yield of 0.43 m^3/kgCODremoval at the organic loading of 4.0 kgCOD/m^3d. The quantity of bacterial mass in the UASB reactor decreased when the organic loading increased. The fraction of bacterial sludge greater than 0.5mm. significantly increased from 0.64 % at the organic loading of 2.0 kgCOD/m^3d to 1.97 % at the organic loading of 4.0 kgCOD/m^3d. The sludge activity improved substantially when the organic loading increased. The activity of the sludge taken from below 1 m. height was significantly higher than the value of the sludge taken from above 1 m. height.