Kandarat Lamchumchang 2012: Identification of Microorganisms from Frozen Seafood Wastewater Treatment Plant by Using Molecular Techniques. Master of Engineering (Environmental Engineering), Major Field: Environmental Engineering, Department of Environmental Engineering. Thesis Advisor: Miss Peerakarn Banjerdkij, D.Tech.Sc. 86 pages.

The majority of microorganisms in 6 units; influent, equalization tank, UASB tank, aeration tank, sedimentation tank and effluent form frozen seafood wastewater treatment plant investigated by polymerase chain reaction (PCR) techniques and sequencing analysis. The PCR techniques amplified approximately 1500 bp of 16S rDNA of each samples and fragment bands were confirmed by gel electrophoresis after PCR. The chemical properties especially BOD and COD indicated that lower efficiency of organic removal than the unit design criteria in the UASB tank and the aeration tank.

The results showed the majority of microorganisms belonged to Fermicute and Proteobacteria phylum. In the influent and the equalization tank found the Fermicute member were *Streptococcus sp*. and *Bacillus sp*. The other units were Proteobacteria member while the UASB tank was *Serratia marcescens, Enterobacter sp., Klebsiella pneumoniae* and *Escherichia coli*. For the aeration tank belonged to Proteobacteria, was *Thiothrix sp.* and uncultured actinobacterium were found. For the sedimentation tank was *Escherichia coli, Shigella sp.*and *Salmonella typhimurium* while the effluent was found *Pseudomonas putida, Providencia sp., Aeromonas veronii* and *Alcaligenes faecalis.* The majority of microorganisms in each of units play the major role in biodegradable of different organic compounds this related to the chemical properties analysis in the study.

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