

Tanachat Chitsopondilok 2012: Effects of Acetate on Nitrogen Removal Efficiency of Anaerobic Ammonium Oxidation Process (ANAMMOX). Master of Engineering (Environmental Engineering), Major Field: Environmental Engineering, Department of Environmental Engineering. Thesis Advisor: Assistant Professor Sanya Sirivithayapakorn, Ph.D. 75 pages.

The objective of this research was to study the effect of organic carbon on the performance of nitrogen removal by Anaerobic Ammonium Oxidation Microorganism (ANAMMOX). The organic carbon we chose was acetate. This research divided into 3 experiments. The first experiment was carried out without acetate added into reactor. In the second experiment, 0.5 mM of acetate was added into reactor. Finally, in the last experiment, 1.0 mM acetate was added into reactor. The experiments were carried out in the Anaerobic Sequencing Batch Reactor (ASBR) with total volume of 1.5 L. The reactor has working volume equal to 1.0 L. This research used a synthesis wastewater. Data from each experiment were collected for 10 cycle.

From the experiments, when acetate was added into reactor the efficiency of nitrogen removal (ammonia and nitrite) by Anaerobic Ammonium Oxidation Microorganism (ANAMMOX) was better than experiment that did not add acetate into reactor. While we increased the concentration of acetate from 0.5 mM to 1.0 mM, we found that the performance did not increased much.

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Thesis Advisor's signature