

Suppajee Pornpongmetta 2010: Effects of Music on Microbial Substrate Utilization:  
Case Study of Aerobic Bacteria from Municipal Wastewater Treatment Plant. Master of  
Engineering (Environmental Engineering), Major Field: Environmental Engineering,  
Department of Environmental Engineering. Thesis Advisor: Assistant Professor  
Monthon Thanuttamavong, Ph.D. 138 pages.

This described the effects music on microbial substrate utilization that was case study of  
Aerobic bacteria from municipal wastewater treatment plant in Kasetsart University. The music  
was played Ruk music of his Majesty King Bhumipol Adulyadej, Farewell, Holy Wars the  
Punishment Due, Oh La Nor my love and the Four Seasons in Batch reactor. The experiment  
was divided into 2 groups, running for 24 hours/cycle in noise proof box. The control group was  
not influence by music with 20 samples. The sample group which contains 100 samples was  
tested by continuous playing of music at sound level volume of 70-75 dB(A)

The result that every music songs was able to increase the substrate utilization of Aerobic  
bacteria compared to the first main group. The increase specific substrate utilization rate  
referred to %COD removed as the Four Seasons, Ruk music of his Majesty King Bhumipol  
Adulyadej, Oh La Nor my love, Farewell and Holy Wars the Punishment Due were 8.20, 4.89,  
4.24, 1.20 and 1.12, respectively. The pattern of the music which increased highly substrate  
utilization was various patterns and tempo of music, meaning lyrics, mood of music and  
separated sound level volume in each frequency that was a specific of each music.

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Thesis Advisor's signature