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A pilot study on the efficiency of mesophilic aerobic degester for the removing of volaatile solids and the pathogen of Ahvaz treatment plant sewage sludge

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Sludge are contains many types of pathogens, decaying materials and parasites and discharging this material in to the environment will causes many of the infectious diseases and degradation of the environment. Environmental experts classified the sewage sludge as a hazardous waste. They emphasis that sewage sludge should be stabilized before its disposal. Processes of sludge treatment such as aerobic digestion can reduce the large number of pathogens in the sludge. For this proposes, the aerobic sludge digestion is mostly used for stabilizing the secandary activated sludge and also for a mixture of primary and secondary sludge in waste water treatment plants. In this study we evaluate the efficiency of aerobic digestion for removing of volatile solids and the pathogens of sewage sludge which gathered from the Ahvaz wastewater treatment plant ,and also we have compared it with the USEPA, recommended standards that used in agriculture in the labaratory of the Environmental health department of Ahvaz Jandishaapour University, for 33 days . After passing over the detention time from 1, 4, 8, 13, 22 to, 33 days, we directly have taken several samples and planed for measuring the volatile solids, total coliform, fecal coliform and some other parametrs such as SVI, pH and etc. The results show that the reduction rate for oll of three controlled parameters have reached to % 58.72, % 92.44 and % 97.14 respectively. Ther fore the aerobic digestion is not able to meet the pathogen reduction requirements class A, but can meet the reduction requirements class B, both of the representatives by USEPA. Furthemore at the detention time less than 8 days , aeration can meet USEPA recommended vector attraction requirements and allwo sludge volume index (SVI) reached to 184 ml/gr after the end of aeration that show their settleability is almost acceptable .

Keywards: Swage sludge, Aerobic digestion, Volatile solids, Fecal coliforms, Rectors

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