

Study Project in Environmental Engineering Title	The Guidelines for Improving Quality of Wastewater from Chicken Slaughter Industry for Water Reuse
Study Project in Environmental Engineering Credits	6
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Abstract

The characteristics of wastewater from a chicken slaughter industry are analyzed in this project, in order to evaluate the possible ways to treat the wastewater for reusing at the chicken cleaning process. The efficiencies of wastewater treatment processes, including of an activated carbon adsorption coupled with ultraviolet disinfection, an activated carbon adsorption coupled with reverse osmosis and an activated carbon adsorption coupled with ion exchange of strong acid resin, are examined in the pilot scale reactors. The results indicate that the activated carbon coupled with reverse osmosis processes can treat the wastewater generating from this chicken slaughter industry and the treated effluent quality meets the standards of drinking water. The additional processes are nominated, which are a sand filtration coupled with reverse osmosis, a reverse osmosis and a pH adjustment of effluent from the activated carbon adsorption coupled with ion exchange of strong acid resin. The first two alternative processes may meet the requirements in engineering aspects but the lifetime of membrane is significantly reduced. The pH adjustment of effluent from the activated carbon adsorption coupled with ion exchange of strong acid resin processes is required the high amounts of chemical agents and the alkalinity is also dramatically increased. According to economical assessment, the activated carbon adsorption coupled with reverse osmosis, the sand filtration coupled with reverse osmosis and the reverse osmosis processes have presented the wastewater treatment costs of 17, 12 and 10 Baht/m³, respectively.

Keywords : Activated Carbon Adsorption/ Reverse Osmosis /Water Reclamation