

Phonphitar Pongprasit 2012: The Removal of Fat and Oil from Kasetsart University (Bang Khen Campus) Canteen Wastewater by Chitin and Chitosan from Pen of Splendid Squid (*Loligo duvauceli*). Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Associate Professor Kanita Tungkananuruk, M.Sc. 81 pages.

The removal of fat and oil from Kasetsart University (Bang Khen Campus) canteen wastewater by chitin and chitosan from pen of splendid squid (*loligo duvauceli*) adsorption was investigated. The studied factors were pH (5-8), shaking rate (50-200 rpm.), shaking time (10-90 min.), contact time (10-90 min.), and oil concentration (0.25-3.0 g/water 50 mL) and amount of adsorbent (0.5-3.0 g). Batch adsorption studies demonstrated which were pH 6, 150 rpm of mixing speed, 10 min of shaking time, 30 min of contact time, and 0.25 g of oil / water 50 mL the chitin had a capacity for adsorption at 51.07% whereas pH 6, 50 rpm of mixing speed, 10 min of shaking time, 10 min of contact time, and 0.25 g of oil / water 50 mL the chitosan had a capacity for adsorption at 40.85%. Real work application was studied by using 200 g chitin and chitosan from pen of splendid squid (*loligo duvauceli*), 20 L of Kasetsart University (Bang Khen Campus) canteen wastewater, 10 min. of shaking time, 30 min. of contact time, chitin found that about 48.51 % was obtained. 10 min. of shaking time and contact time, chitosan found that about 45.48% was obtained. In addition, the total dissolved solids, suspended solid, BOD and COD, can be removed by chitin and chitosan. The recovery of used chitin and chitosan from pen of splendid squid was found to be less efficient in term of adsorption by half from the first adsorption is 17.22% and 20.68% of fat and oil respectively.

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