

**MUD CRAB (*Scylla serrata*) SHELLS FOR THE REMOVAL
OF HUMIC ACIDS FROM SANTA BARBARA
WELL WATER**

by

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ABSTRACT

MUD CRAB (*Scylla serrata*) SHELLS FOR THE REMOVAL OF HUMIC ACIDS FROM SANTA BARBARA WELL WATER

The chemical contamination of drinking water from a wide range of contaminants such as humic acids can potentially lead to health-related in living organisms, especially humans. In rural areas of the Philippines, the use of low cost methods to remove water pollutants is, therefore, of great interest. In this study, osterized mud crab (*Scylla serrata*) shells or exoskeletons from cooked crab wastes were used to remove humic acids from the Santa Barbara well water. Adsorption experiments were done to evaluate its capacity to remove humic acids from the well water. Adsorption Isotherms and Fourier Transform Infrared Spectroscopy were employed to study the characteristics of the adsorption of humic acids onto the OSSE (osterized *Scylla serrata* exoskeletons). Adsorption experiments showed that at an average 1.0010 g of OSSE and after six hours of agitation, an average 74.95% of humic substances were removed from 50 mL of Montinola, Santa Barbara well water sample. Isotherm experiments showed that the experimental data can be fitted in both Langmuir and Freundlich models with low K values of 0.0235 L/mg and 0.4450 (mg/g)(L/mg), respectively. Based on the results of the above experiments, OSSE is a good adsorbent for humic acids in well waters (although more research need to be done on the removal of the substances remaining in the water after OSSE treatment) and the U-OSSE (used osterized *Scylla serrata* exoskeletons) can possibly be recycled.