

The Ability Of Crab And Cockle Shell To Adsorb Lead And Chromium From Industrial Effluent.

ABSTRACT

Abstract : The ability of crab shell (*Scylla serata*) and cockle shell (*Anadara granosa*) to remove Pb, and Cr from industrial effluent was examined to determine its removal efficiency. This research was conducted under constant pH around 4 under room temperature and all samples were shaken to 150 rpm. Other factors like amount of adsorbent, types of adsorbent and time equilibrium was examined along this research. The highest uptake of heavy metals recorded is by crab shells compare to cockle shells. All heavy metals except chromium reached equilibrium after 60 minutes time. The most of heavy metals was adsorbed by amount of 1.0 g compare to other amount of adsorbent (0.5 g and 1.0 g). The amount of adsorbent and type of adsorbent were strongly correlated by amount of heavy metals adsorption. ($p < 0.001$). Chromium was the highest heavy metals that were removed in industrial effluent. The highest reading was recorded as 97.45%. CaCO_3 and chitin play an important role to adsorb heavy metals in industrial effluent. Although, there are many other particles existed in industrial effluent but still crab shells and cockles can be used as biomass adsorbent to remove heavy metals in industrial effluent. Keywords: Lead, chromium, crab shell, cockle shell, adsorbent, industrial effluent