DITHIZONE MODIFIED SALACCA PEEL (*Salacca zalacca*) as MERCURY (II) BIOSORBENT

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ABSTRACT

Biosorption of Hg^{2+} from aqueous solution using salacca peel (KS) and dithizone modified salacca peel (KS-MD) was investigated in this study. The biosorbents were characterized by IR spectrophotometer, Scanning Electron Microscopy (SEM), Gas Sorption Analyzer (GSA) and Boehm Titration. The biosorption properties of Hg^{2+} as function of contact time was measured using Mercury Analyzer. Biosorption Equilibrium was reached in 90 minutes with maximum capacity 0,4957 mg/g for KS biosorbent and 0,4966 mg/g for KS-MD biosorbent when the initial concentration of Hg^{2+} was 5 mg/L. The biosorption isotherm were evaluated with Langmuir and Freundlich isotherm models, while the biosorption kinetic were evaluated with pseudo-first order and pseudo-second order rate equation. It is found that both biosorbent well fitted with Langmuir isotherm model and pseudo-second order rate equation.

Keywords: biosorption, biosorbent, KS, KS-MD, characterized, biosorption isotherm, biosorption kinetics