THE ENHANCEMENT OF ELECTROFLOTATION PROCESS USING BIOCOAGULANT OF TAMARIND SEED (*Tamarindus indica*) ON THE LEACHATE TREATMENT

ABSTRACT

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In this study, the enhancement of electroflotation process using tamarind seed (*Tamarindus indica*) as a coagulant or called Electro-Bio process on the leachate treatment has been evaluated by varying biocoagulant dosage of 0,025; 0.05; 0.1; 0.15 and 0.2 g/500 mL. The electroflotation process was performed with Stainless Steel electrodes as cathode and titanium as anode at DC constant voltage of 40 V for 30 minutes. The enhancement of the Electro-Bio process was evaluated by measuring the decreasing of the Total Dissolved Solids (TDS), Electrical Conductivity (EC), Turbidity, Pb and Cr concentration and increasing of Dissolved Oxygen (DO). The initial conditions of leachate samples which have been diluted 20 times had the TDS, EC, turbidity, DO, Pb and Cr concentrations respectively for 719 ppm; 1 mS/cm; 2.97 NTU; 2.3 mg/L; 0.6665 mg/L and Nil. The results showed that the enhancement of Electro-Bio with biocoagulant could decreasing the TDS, EC, turbidity, Pb concentration was respectively for 584 ppm (18.77%), 0.84 mS/cm (16%), 0.15 NTU (94.95%), 5822 mg/L (12.65%) and increasing DO 3.8 mg/L (65.28%) at certain doses of biocoagulant. In this process there was the effect an increased of Cr concentration on the results of leachate treatment. Based on the results could be conclouded that the addition of tamarind seeds as biocoagulant in leachate treatment was proven the enhancement of the electroflotation process.

Keywords: Leachate, Tamarind seed, Biocoagulant, Electroflotation