Adsorption of Lead (II) Ions by Sorptive-Flotation Technique from Synthetic Solution Using powdered Palm Fronds (PF) and Oleic Acid

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ABSTRACT

Heavy metals are the largest class of contaminants and also most difficult to treat. Lead Pollution impacts all the systems of the human body. Many of the methods utilized to remove lead from west water. Therefore, this study was carried out to examine the potential and effectiveness of using powdered palm fronds, which was prepared from palm fronds (a cheap agricultural and non- toxic material), to remove lead from water. A series of bench –scale experiments were conducted in the laboratory, aiming to assess the feasibility of using powdered palm fronds (PF) as an effective bio sorbent and oleic acid (HOL) as a surfactant. The effects of the process variables such as : initial solution PH, sorbent , surfactant and lead concentration and shaking time that influence the biosorptive – flotation process were examined . Promising results were obtained under the optimum conditions, according to which nearly 100% of lead, at PH 7 at room temperature (~ 25°C), was removed. Moreover, a sorption and flotation mechanism is suggested.

KEY WORDS: lead, sorptive-flotation, powdered palm fronds, oleic acid