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Effectiveness of Crushed Egg Shell, Orange Peel and Charcoal to Minimize the Pollution Caused by Tannery Industry in Ranipet District Tamilnadu

Palaar river walaja Anaicut Dam, Beautiful view of nature

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Abstract: *This research was conducted to study the effectiveness of Crushed egg shell (**Gallus gallus domesticus**) residue, orange peel (Citrus sinensis) and charcoal (Mahogany; Swietenia mahagoni) as the bio-adsorbents to minimize the pollution of Palaar River caused by tannery industry at Ranipet in Tamilnadu. Tannery industries discharged effluents containing huge pollutants. Crushed egg shell, orange peel and charcoal are available bio-adsorbents and are abundant in Bangladesh. These adsorbents are low cost for adsorption of organic and inorganic pollutants from water and wastewater. From the points of view of multipurpose utilization and environmental protection, utilization of Crushed egg shell, orange peel and charcoal were in important. Therefore, this study could help in converting these wastes into useful product by investigating its effectiveness for wastewater pollution minimization. Tannery wastes were treated with these three types of bio-adsorbents mentioned above. The results revealed that using of Crushed egg shell; orange peeland charcoal were very helpful to minimize the pollution of heavy metals. Among the analyzed heavy metals, the concentration of chromium (Cr) decreased the most by the organic adsorbents. The effectiveness of these organic residues can be ranked as: Crushed egg shell ≥ orange peel ≥ charcoal*

Keywords: Palaar river, bio-adsorbent, charcoal, developing country, Crushed egg shell

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