



TREATMENT OF COIR MILL WASTEWATER USING ACTIVATED CHARCOAL

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Abstract: The coir mill industry plays a significant role in the national economy, but its wastewater poses a substantial environmental challenge due to its high electrical conductivity (EC), high chemical oxygen demand (COD) and coloration. Untreated discharge of this wastewater may affect aquatic macro and micro fauna and flora and ultimately be fatal to fish species. Since the BOD/COD ratio of the wastewater is 0.47, biological treatment is not highly efficient. Therefore, this study investigated the use of Charcoal Activated Decolorizing Powder (CADP), a commercially available product, to treat coir mill wastewater. Batch adsorption experiments were conducted to determine the optimal dosage and contact time of CADP for effective removal of color, EC and COD. The results showed that the optimal dosage for COD, EC, and color removal was 16 g/L, with an optimal contact time of 4 hours. This resulted in removal efficiencies of 93%, 38%, and 30% respectively. The adsorption capacities of CADP for COD and EC were found to be 298 mg/g and 59.6 mg/g, respectively, at the dosage of 16 g/L. This study demonstrates that CADP is an effective adsorbent for the treatment of coir mill wastewater. This technology can be used to safeguard the environment by reducing the pollution load from the coir mill industry.

Keywords: Coir mill, Wastewater, Adsorption, Decolorizing, Activated carbon