

Abstract Details

Title: A Study on Feasibility of Low Cost Adsorbent to Reduce the Organic Load of Leachate

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Abstract: The present study is involved in finding the feasibility of easily available agro-waste materials like bagasse and rice husk to be used as adsorbent to remove many toxic pollutants from the leachate. The problem of leachate arises due to improper land filling and insanitary disposal of municipal solid waste which further percolates into the ground water to pollute it. The leachate which is never easy to collect in improper land filled site was prepared in laboratory in anaerobic conditions to obtain the similar range of parameters of actual leachate. Various adsorption experimental studies were performed in continuous flow manner by using both types of low cost adsorbent made up of bagasse and rice husk to get the optimized system. Further, using the optimized setup, experiments have been carried out to find out the better low cost adsorbent out of these two. The study concludes that adsorbent prepared by using rice husk is showing better adsorptive properties than the adsorbent prepared from bagasse. The reason of this performance is due to the high porosity of rice husk made adsorbent which provides more active sites for the adsorption of organic compounds present in the leachate, this result in bringing down the parameters of leachate those are necessary for its treatment. Although the study also confirms that the use of low cost adsorbent of rice husk in treatment process can not be the main process of treatment but it could be used as pretreatment or post treatment stage of treating the waste water like leachate.

Keywords: Leachate, Bagasse, adsorbent.