



## Comparative account of Batch Reactor and Anaerobic Baffled Reactor in Methanogenesis of Spent Chrome Liquor

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### ABSTRACT

*Tannery effluent contains large amount of biodegradable organics, which can be degraded easily by methanogenic bacteria. The high content of COD, BOD, Total solids, Total suspended solids etc. indicate its potential for methanogenesis. The biological treatment of the spent chrome liquor through Batch reactor (BR) and Anaerobic baffled reactor (ABR) reduces the highly toxic content of total chromium to 99.9%. The present study emphasizes on the degradation of organic matter along with decrease in the load of pollutants to considerable extent by both the reactors. After 55 days of operation COD, Total Chromium, Chloride, Total solid, Sulphate reduction of 83.5%, 99.9%, 66%, 90% and 59% respectively were achieved in Batch reactor in comparison to 91%, 99.9%, 70%, 93% and 71% respectively in ABR. Besides this biogas yield with methane gas % (v/v) in Batch reactor and Anaerobic baffled reactor were 0.165m<sup>3</sup>/kg COD removed with 57-59% and 0.186m<sup>3</sup>/kg COD removed with 60-63% respectively.*

**Keywords:** BR, ABR, COD, BOD, DSS, GNSP.

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