

Performance Evaluation of Cultured Bacteria in the Treatment of Opaque Beer Brewery Wastewater

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Abstract:

An evaluation of the performance of a mixed culture of bacteria in reducing the organic content of effluent from an opaque beer brewing plant was carried out in this study. In this study brewery wastewater characterization was done and bacterial culture was then added to the wastewater. Biological treatment was done at ambient temperature to reduce the chemical oxygen demand (COD). The maximum treatment efficiency (TE) achieved in terms of COD was 72 % and for Permanganate Value (PV) it was 69 % whilst the Total solids (TSS) reduction was from 1220 mg/L to 400mg/L. The results indicated that the mixed culture was effective for treating opaque beer brewery wastewater at room temperature 25°C to meet the specified quality parameters of the effluent that can be discharged into municipal waterworks. Breweries can therefore apply enhanced biological methods to reduce the organic content of their wastewater.

Keywords: Cultured bacteria, brewery wastewater, biological treatment, efficiency