

## Abstract

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A laboratory scale coagulation/flocculation process was used for the reduction of colour, turbidity and Chemical Oxygen Demand (COD) in biologically treated yeast processing effluent. The coagulation/flocculation was carried out to assess the efficacy of post-treatment of anaerobically treated effluent from an Upflow Anaerobic Sludge Blanket (UASB) reactor. The combination of semi-continuous UASB biological reactor treatment followed by a post-treatment process using aluminium chlorohydrate polyadamac as a coagulant was investigated. Jar tests were conducted in 6 × 500 ml jars filled with 300 ml of anaerobically treated wastewater. Initial pH of the anaerobically treated effluent was adjusted to pH 2; 4; 6; 8 and 10. No pH adjustment was made to the control. COD, turbidity, colour and settleable solids were recorded after coagulation/flocculation. The sludge was dewatered for further analysis using thermal treatment. Thermogravimetric analysis (TGA) of the sludge was also done to ascertain the characteristics of the flocs. The highest treatment efficiencies for COD reduction and colour removal were recorded at pH 6 with 63.63% and 68.25%, respectively. A 91.33% reduction in turbidity was observed in this study. The sludge loses moisture and other volatile organics in TGA analysis. Post treatment of anaerobically treated bakers' yeast effluent reduces the pollution potential of the wastewater. However, the process of coagulation/flocculation generates a lot of sludge.