

## **Aerobic mesophilic treatment of potato industry wastewater**

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### **Abstract:**

An evaluation of a laboratory-scale aerobic method for the treatment of potato-processing wastewater at 37°C was investigated. Composite samples were collected to establish batch variations. The wastewater was characterized for Chemical Oxygen Demand (COD), Permanganate Value (PV), Total Solids (TS), phosphates and pH over a period of 6 months. Wastewater with an average of 6.8 g COD/l, high concentration of total solids (up to 6725 mg/l), and low pH was subjected to active sludge treatment in a Continuously Stirred Tank Reactor (CSTR) with Organic Loading Rates (OLRs) gradually increased from 3.4 to 12.1 g COD/litre/day. Stepwise increase in OLR reduced average COD reduction from 86% at 3.4 g COD/litre/day to 76% at 12.1 g COD/litre/day. High rates of treatment efficiency (TE) were recorded at low OLRs (<6.8 g COD/litre day) with a notable pH of the effluent increasing from 4 to neutral values. TS reduction was achieved at 57% at HRT of 2 d. This study indicated that biological methods can be used for treatment of potato-processing wastewater in order to reduce the organic load and other pollutants acceptable levels for municipal discharge.