

Characterization of Waste Water Effluent from Dairy Industry for Energy Generation

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Abstract—The waste water from the dairy industries is highly putrescible. It possesses serious health problems due to the presence of various hazardous substances. It is one of the most polluting of industries, not only in terms of volume of effluent generated, but also in terms of characteristics as well. It generates 0.2-10 litres of effluent per year with an average value of 2.5 L/L of milk processed. Since dairy effluents decompose readily and pollute the environment, these industries are using waste water treatment methods before discharging this effluent.

The characteristics of a dairy effluent contain Temperature, Color, pH, DO, BOD, COD, Dissolved solids, suspended solids, chlorides, sulphate, oil & grease. The effluent sample could be a very good source of microbes as well. Depending upon the microbial composition we can use them for the generation of energy/fuel microbial fuel cell (MFC).

Through this study we aim to characterize the untreated and treated waste water effluent sample from Mother Dairy industry. We have also determined the microbial content of both treated and untreated samples. The result of various characteristics including Biological Oxygen Demand, Chemical Oxygen Demand, Dissolved Oxygen, Total Suspended Particles and Total CFU/ml are reported in this study.

Keywords: Effluent, Biological Oxygen Demand, Chemical Oxygen Demand, Microbial Fuel Cell