

Characterization of Brewery Wastewater Composition

Authors : Abimbola M. Enitan, Josiah Adeyemo, Sheena Kumari, Feroz M. Swalaha, Faizal Bux

Abstract : With the competing demand on water resources and water reuse, discharge of industrial effluents into the aquatic environment has become an important issue. Much attention has been placed on the impact of industrial wastewater on water bodies worldwide due to the accumulation of organic and inorganic matter in the receiving water bodies. The scope of the present work is to assess the physic-chemical composition of the wastewater produced from one of the brewery industry in South Africa. This is to estimate the environmental impact of its discharge into the receiving water bodies or the municipal treatment plant. The parameters monitored for the quantitative analysis of brewery wastewater include biological oxygen demand (BOD₅), chemical oxygen demand (COD), total suspended solids, volatile suspended solids, ammonia, total oxidized nitrogen, nitrate, nitrite, phosphorus, and alkalinity content. In average, the COD concentration of the brewery effluent was 5340.97 mg/l with average pH values of 4.0 to 6.7. The BOD and the solids content of the wastewater from the brewery industry were high. This means that the effluent is very rich in organic content and its discharge into the water bodies or the municipal treatment plant could cause environmental pollution or damage the treatment plant. In addition, there were variations in the wastewater composition throughout the monitoring period. This might be as a result of different activities that take place during the production process, as well as the effects of the peak period of beer production on the water usage.

Keywords : Brewery wastewater, environmental pollution, industrial effluents, physic-chemical composition

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