## Abstract

The main objective of this study was to investigate any consistent relationship between Biochemical oxygen demand (BOD) and Chemical oxygen demand (COD) for three different food industrial waste waters. These two parameters were widely used and were important tests in the measurements of organic pollution in waters. The determination of BOD was tedious and time consuming and depended on biochemical factors while COD was precise, time saving and completely chemical in nature. If the BOD could be accurately estimated from the COD, manpower and cost would be reduced substantially.

Prior to the analysis of waste waters of synthetic samples of known compositions having five different theoretical oxygen demands (ThOD) made from glucose and phthalate separately, were analysed for any relationship between $BOD_3$ and COD. The feasibility of using 3_day BOD at room temperature instead of 5_day at 20° C was also studied. All samples collected were grab samples and were raw waste waters from each industry. COD test was performed by the acid potasium dichromate refluxing method. Dissolved oxygen in BOD procedure was done by azide modification of the Winkler method.

Data were computerized to obtain linear regressions, BOD/COD ratios, and correlation coefficients. An ideal

relaionship would have a regression coefficient of r=1.00; r=0 would indicate a lack of any relationship. There was a positive correlation between $BOD_3$ and COD for synthetic samples (glucose and phthalate separately) and for three different industrial waste waters. The determination of BOD and COD provided other useful information too. It gave an indication of the biodegradability of a particular waste, whether the particular waste contained toxic materials, or not.

None of the COD and BOD values of three different food industries fulfilled the requirements for industrial effluents discharged into inland surface waters. Corrective measures to satisfy the requirements are essential in order to conserve our environment.