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Determination of the Oxidative Potential of Organic Materials: Method Development

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Abstract : In this paper, the solution of glucose, yeast and glucose yeast mixture are being used as sample solution for determining the chemical oxygen demand (COD). In general COD determination method used to determine the different rang of oxidative potential. But in this work has shown to determine the definite oxidative potential for different concentration for known COD value and wanted to see the difference between experimental value and the theoretical value for evaluating the method drawbacks. In this study, made the values of oxidative potential like 400 mg/L, 500 mg/L, 600 mg/L, 700 mg/L and 800mg/L for various sample solutions and determined the oxidative potential according to our developed method. Plotting the experimental COD values vs. sample solutions of various concentrations in mg/L to draw the curve. From these curves see that the curves for glucose solution is not linear; its deviate from linearity for the lower concentration and the reason for this deviation is unknown. If these drawback can be removed this method can be effectively used to determine Oxidative Potential of Industrial wastewater (such as: Leather industry wastewater, Municipal wastewater, Food industry wastewater, Textile wastewater, Pharmaceuticals waste water) that's why more experiment and study required.

Keywords : bod (biological oxygen demand), cod (chemical oxygen demand), oxidative potential, titration, waste water, development

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