

KINETIC STUDY OF ANAEROBIC DIGESTION OF SULPHATE-RICH WASTEWATERS FROM MANUFACTURING FOOD INDUSTRIES

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ABSTRACT

The process kinetics of an anaerobic digestion process treating sulphate-rich wastewater was investigated. A laboratory scale continuously stirred tank reactor (5 l, CSTR) was operated with a molasses wastewater at a range of hydraulic retention times (HRTs) and the results were analysed in two ways: the Monod model and the Contois model. Both kinetic models showed a good agreement with the experimental results with a high value of correlation. The results further showed that the Contois model provides a better prediction for the performance of the anaerobic digester than that of the Monod model. In addition, the investigation showed that wall growth played an important role when digester contained low concentrations of solids.