

Characterization of kenaf fibre-retting wastewater

ABSTRACT

Characterization of wastewater from kenaf water retting process was implemented in this study. Kenaf water-retting process was implemented in the laboratory. After ten days of retting process completed, wastewater from the retting process was used in the experiment. Parameters measured were including BOD, COD, colour, turbidity and other important parameter used to evaluate pollution level in the wastewater sample. All analyses results were compared to allowable limit that regulated by Department of Environment (DOE) Malaysia. From the analyses, it shows that concentrations of BOD and COD were recorded in the range of 70-230 and 2000-3800mg/L respectively. While other parameter such as TSS, colour and turbidity were observed between 200-500mg/L, 1000- 1200PtCo and 180-280NTU correspondingly. Most of the parameters analyzed were not complied with law and regulations set by DOE. Other than that, presence of inorganic and organic compounds was identified in the sample. Concentration of inorganic compound was detected in low concentration. Whilst, more than thirty types of organic compounds were recognized in the wastewater sample, and most of the organic compound existed comes from the plant itself. The wastewater cannot be released into water stream without any proper treatment process. Due to high amount of wastewater generated from the retting process, treated wastewater can be considered to be reused in the next retting cycle or for land irrigation.

Keyword: Kenaf fibre; Water retting; Wastewater; Characteristic; Water pollution