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Physicochemical Analysis of Effluents from Agro-Based Paper Mill in Uttarakhand State of India

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Abstract : The pulp and paper industries discharge of large amount of effluent as wastewater in the surrounding streams thereby causing serious health and environmental problems. These large quantities of effluents need to be characterized for evolving proper treatment strategy prior to their disposal. Physicochemical characteristics of effluents from an agro-based paper mills located in Uttarakhand state of India were analyzed in terms of pH, colour, TS, TDS, TSS, turbidity, BOD, COD, and AOX. The effluent samples collected from different processing units of the paper mill varied considerably across the discharge streams. The mean values pH, colour, TS, TDS, TSS, turbidity, BOD, COD, and AOX were found in the range of 2.55–9.8±0.05, 410–2802 PCU, 1980.65–2785.79 ppm, 1650.67–2470.35 ppm, 315.44–401.35 ppm, 73.22–349.37 NTU, 170.32–670.42, 705.52–2000.55 ppm, and 14.98–40.82 respectively. Result shows that all the studied physicochemical parameters of effluents at different processing units of the mill are higher than the permissible standards that need proper treatment for their safe disposal.

Keywords : Effluents, Physicochemical characteristics, Paper mill, BOD, COD.

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