

Volarization of Sugarcane Bagasse: The Effect of Alkali Concentration, Soaking Time and Temperature on Fibre Yield

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Abstract : The objective of this paper was to determine the effect of NaOH concentration, soaking time, soaking temperature and their interaction on percentage yield of fibre extract using Response Surface Methodology (RSM). A Box-Behnken design was employed to optimize the extraction process of cellulosic fibre from sugar cane by-product bagasse using low alkaline extraction technique. The quadratic model with the optimal technological conditions resulted in a maximum fibre yield of 56.80% at 0.55N NaOH concentration, 4 h steeping time and 60°C soaking temperature. Among the independent variables concentration was found to be the most significant ($P < 0.005$) variable and the interaction effect of concentration and soaking time leads to securing the optimized processes.

Keywords : sugarcane bagasse, low alkaline, Box-Behnken, fibre

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