

Title: Reducing Sugars Production By Enzymatic Saccharification Of Sodium Hydroxide-Hydrogen Peroxide Pretreated Sugarcane Bagasse.

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Abstract: The selection of appropriate pretreatment technology and the pretreatment parameters is important for efficient conversion of lingo cellulosic materials to reducing sugar by the action of enzymes on the treated biomass. In this study, reducing sugar production from sodium hydroxide-hydrogen peroxide pretreated sugar cane bagasse was optimized using a 2³-central composite design (CCD) of experiments. The investigation was based on the influences of process parameters of temperature, time, and hydrogen peroxide concentration on the production of reducing sugars after enzymatic hydrolysis process on treated biomass. An optimum pretreatment condition of 63°C, 8.5 h, and 3% H₂O₂ was predicted and experimentally validated to give a reducing sugar yield of 194.75 mg glucose equivalent/g dry substrate. The pretreatment method used in this study showed to have a disrupting effect on the raw material thereby increasing enzymatic action on the treated material to the production of reducing sugars.