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
of

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Effect of Sodium Borohydride on Populus tremula L. Kraft Pulping

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Abstract: Sodium borohydride (NaBH_4) added kraft pulping was performed using European aspen (*Populus tremula* L.) chips and the effects of the NaBH_4 addition on the physical and optical properties of pulps and resultant papers were investigated. In order to determine the optimum cooking parameters, 6 different laboratory experiments were carried out, which indicated that 2 cooking conditions were better than the others. The effects of 1%, 2%, and 3% NaBH_4 additions on pulps and paper properties were investigated based on these 2 cooking conditions. It was noted that the increasing level of NaBH_4 added improved the screened pulp yield and pulp viscosity levels and reduced the Kappa number. There was no statistical significance regarding the strength properties of kraft- NaBH_4 pulps compared to control pulps at 50 ± 3 °SR freeness level. However, the brightness of handsheets was increased by NaBH_4 additions.

Key Words: *Populus tremula* L., kraft pulping, sodium borohydride, screened yield, paper properties

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