Pulping of Keora (*Sonnertia appetula*) A Major Mangrove Species of Bangladesh

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ABSTRACT

Keora (*Sonnertia appetula*) is the main species in the coastal region of Bangladesh. At present, this species has no industrial or other application. In this paper, keora has been characterized and evaluated as a pulping raw material. It has a high lignin and a low α-cellulose content. Its fiber length is 0.88 mm, which is considered as short length fiber. Keora was subjected to kraft pulping with various cooking time and active alkali charge. A central composite design was used to investigate the influence of operational conditions on the pulp properties (total pulp yield, screened pulp yield, kappa number tensile index, burst index and tear index). A second order polynomial model consisting of two independent variables was found to accurately describe the kraft pulping of keora. The minimum R^2 value was above 0.8. Values of screened pulp yield, total pulp yield, kappa number, tensile index, burst index and tear index at the central point of operational variables were 39.9 %, 40.8 %, 35.2, 35.1 N.m/g, 3.9 kPa.m^2/g and 9.5 mN.m^2/g, respectively, which are within the range of predicted values.

Keywords: Mangrove species, Keora (*Sonnertia appetula*), Chemical characteristics, Pulping, Papermaking properties.