

New approach to use of kenaf for paper and paperboard production.

ABSTRACT

This study sought to determine the suitability of fractionation and consequence-selective processing (separation of long fiber and short fiber, beating long fiber, and remixing with short fiber to target freeness) as a new approach to use of kenaf whole stem pulp for paper and paper-board production. A laboratory Bauer-McNett Classifier with screen 18 mesh was used to separate short fibers and long fibers of the unbeaten kenaf whole stem soda-anthraquinone high kappa and low kappa pulps. For comparison, the initial unbeaten pulps were beaten in the PFI mill to the same freeness (300 mL CSF). Results of our patented method showed that the fractionation process was able to provide a good opportunity to beat the long fiber portion at higher PFI revolutions and to achieve better fibrillation, significantly improving all paper properties of kenaf pulps except for tear index and producing sheets with better drainage and strength properties compared to conventionally beaten pulps, especially in the case of kenaf high kappa pulp.

Keyword: Kenaf; Fractionation; Beating; Drainage time; Strength properties.