Wheat Straw Pulp as Reinforcing Aid for Recycled Softwood Pulp

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ABSTRACT

Repeated papermaking reduces the bonding potential of pulp fibers. For efficient utilization of secondary fibers, it is important to find ways to recover this lost potential. Various methods are in practice; mechanical refining, chemical additives, enzyme treatment, physical fractionation, and blending. Blending of a virgin pulp with recycled fibers helps in upgrading the recycled pulps. Generally, the pulps used for blending are stronger than the recycled pulps; mostly virgin softwood pulps are used. In the present work, an attempt is made to study the usefulness of blending wheat straw pulp for upgrading recycled softwood pulps.

Wheat straw fibers are remarkably good in fiber bonding potential, which they retain even on repeated papermaking. Blends of wheat straw pulps and recycled softwood pulps can combine the benefits of high bonding potential of wheat straw fibers and high inherent strength of softwood fibers to result in a more economical and environmentally benign papermaking furnish. In this paper, experimental observations on the effect of blending wheat straw pulp in different proportions on the physical properties of recycled softwood pulps have been discussed. The results show that wheat straw pulps enhance strength of recycled pulps and the blends containing about 40 to 60% wheat straw pulp offer the best combination of tensile and tear strengths.