

Characteristics of pulp produced from refiner mechanical pulping of tropical bamboo (*Gigantochloa scortechinii*)

ABSTRACT

Bamboo properties are somewhat similar to certain timbers but it has an advantage of having longer fibres, making it suitable for the production of pulp for paper and hardboard. However, the pulping process is a very crucial stage to produce fibres with an optimum quality. This study was carried out to characterize the pulp of *Gigantochloa scortechinii* using refiner mechanical pulping (RMP). The parameters evaluated included the effects of pre-treatment soaking in NaOH or steaming of chips and effects of refiner plate gap on pulp quality. Pulp quality was assessed based on the properties, yield, and lignin content of fibres. The pre-treatment with NaOH at 60°C for 6 h was found to produce superior quality pulp and lesser lignin content compared to pre-treatment by steaming at 150°C for 3 h. Meanwhile, the refiner plate gap test showed that the two cycles of refining (2.5-mm followed by 0.5-mm plate gap) reduced the lumpiness of the fibre, but it had lower felting power and Runkel ratio. Two cycles of refining process also led to higher fibre yield, produced more unbroken and slender fibres as compared to when one cycle treatment using 2.5-mm plate gap was used.

Keyword: *Gigantochloa scortechinii*; Refiner mechanical pulping; Bamboo pulp.