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Chemical Characteristics and Kraft Pulping Response of *Hibiscus cannabinus* bast

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Abstract: *Hibiscus cannabinus* (kenaf) plants grown in the Agricultural and Forestry Research Center at the University of Tsukuba were separated into three parts, (upper, middle and lower), and their bast and core parts were subjected to protein, lignin and carbohydrates analyses. We clarified the differences of the chemical features of these parts. The lower part of the core contained more lignin and xylan than the upper part and the upper and lower bast parts. The core accumulated a large amount of lignin with a high syringyl to guaiacyl ratio, which suggests rich non-condensed lignin structures. Cooking efficiency of the bast was compared with that of *Acacia mearnsii*, *Eucalyptus* spp. and *Cryptomeria japonica* wood under kraft-anthraquinone pulping conditions. Although the lignin content of the bast was lower than that of *A. mearnsii* wood, the selectivity of delignification of the bast was not better than that of the hardwood in the kraft pulping process. However, the bast pulp was easily oxygen-bleached, resulting in a low kappa number.

Keywords: kenaf, carbohydrates, lignin, kraft pulping, kappa number

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