CHARACTERIZATION OF *MUSA PARADISIACA* PEEL AND ITS DERIVED PAPER

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ABSTRACT

CHARACTERIZATION OF *MUSA PARADISIACA* PEEL AND ITS DERIVED PAPER

Musa paradisiaca is a variety of bananas used mainly for cooking instead of being consumed fresh. The skin, frequently seen as a byproduct, holds valuable nutritional and industrial potential. This research aimed to determine the nutritional content of the banana peel of *Musa Paradisiaca* and produce paper from it. The banana peel was analyzed for its nutritional content across different ripening stages. The results showed that the nutritional content in the banana peel varies depending on the maturity stages with unripe peels having the highest dry matter and fat content, ripe peels having the highest moisture, crude fiber, and protein content, and overripe peels having the highest ash content. Moreover, the total sugar content increases during the ripe stage due to enzymatic conversion to starch, and the total phenolic content of the ripe peel is at 7.93 mg GAE/g, indicating strong antioxidant properties in the peel. Ripe banana peels were identified as the best for paper production due to their higher moisture content, which is essential for the pulping process, and their abundant fiber content that provides structural integrity for paper formation. The paper made from the peel is pale yellow with a rough texture and moderate flexibility compared to regular paper. Furthermore, the ATR-FTIR analysis of the paper indicates that the presence of functional groups contributes to the paper's structural integrity. Additionally, the paper exhibited moderate tensile strength and rigidity, and a soil burial experiment showed a 36.43% decrease in weight over 10 days, indicating rapid biodegradation.