

**PROCESSING OF PAPERBOARD FROM THE FIBER OF TORCH
GINGER (*Etilingera elatior*) STEM AT DIFFERENT
LEVELS OF CASSAVA STARCH AS BINDER**

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ABSTRACT

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This study examined the potential of Torch Ginger (*Etilingera elatior*) stem fiber as an alternative source of fiber added with different levels of cassava starch as binder for paperboard production. The study was established with three (3) treatments and each is replicated thrice. The treatments were: Treatment 1: 240 grams cassava starch, Treatment 2: 320 grams cassava starch, and Treatment 3: 480 grams cassava starch. Using a molder, the pulp was molded and sundried until the desired weight was achieved. The paperboards were then tested in terms of odor, paper whiteness, smoothness/texture, grammage, water absorbency, and pH level. The data collected was statistically analyzed using one-way analysis of variance (ANOVA) at 1% and 5% levels of significance. Statistically, results showed significant difference in the odor, paper whiteness, smoothness or texture, or water absorbency of the produced paperboard

among the treatments, while the ANOVA results for grammage showed a significant difference. Moreover, the pH level was tested in a composite manner, with pH values ranging from 8.7-9.0 and Treatment 1 having the lowest unit production cost analysis which is PHP 14.46 per piece of paperboard. In addition, the approximate overall grammage ranges from 400 to 600 gsm, and according to International Standardization Organization standards, paperboard produced from this study as paperboard. Thus, torch ginger (*E. elatior*) stem fiber is a potential material for paperboard production.

Keywords: Etlingera elatior, NaOH, Paperboard, Cassava Starch, pH Level