

**PRODUCTION OF PAPER STRAW FROM
COFFEE (*Coffea canephora*) HUSKS**

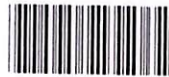
Research Study

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**PRODUCTION OF PAPER STRAW FROM
COFFEE (*Coffea canephora*) HUSKS**

A Research Study
submitted to the faculty of
Science High School, College of Education
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In partial fulfillment of the requirements
for graduation



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ABSTRACT

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The study entitled “Production of Paper Straw from Coffee (*Coffea canephora*) Husks” was conducted at the Pulp and Paper Testing Laboratory of the University of the Philippines Los Baños- Forest Products Research and Development Institute primarily to produce paper straw from coffee husks. Specifically, this study aimed to 1) determine the percentage fiber recovery from coffee husks; 2) ascertain the properties of the paper straws in terms of tensile strength, tear index, burst index and thickness; 3) find out the absorbing capacity of the produced paper straws; 4) identify the sensory characteristics of the produced paper straw from coffee husks in terms of color, odor, and texture; and 5) establish the level of acceptability of the produced paper straw from coffee husks.

Experimental research was employed utilizing three treatments with varying amounts of coffee husks and waste paper: T1 (50% waste paper + 50% coffee husks), T2 (60% waste paper + 40% coffee husks) and T3 (65% waste paper + 35% coffee husks).

Friedman Analysis of Variance was used to determine the significant differences among the three treatments. The quality of the paper straws made was evaluated in terms of color, odor, texture, and level of acceptability by thirty (30) respondents composed of 10 teachers and 20 students from CvSU- Science High School.

Forty two (42%) percent of the fiber present in coffee husks was recovered.

Treatment 3 emerged first in terms of tensile strength and resistance to tear, second in terms of burst index and thickness. Treatment 1 was second in terms of tensile strength, third with respect to tear index and thickness but first with regard to resistance to burst. Treatment 2 was third in terms of tensile strength and burst index, second with respect to tear index but the thickest of all the treatments. Treatment 2 also had the highest absorbing capacity.

Results of the sensory evaluation revealed that all three treatments are brown in color, with pleasant odor and slightly smooth in texture. Moreover, all the treatments are generally acceptable.

In this study, it has been proven that the use of coffee husks is feasible in making paper and eventually paper straw.

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INTRODUCTION

Coffee has always been a regular drink of majority of the people around the globe, thus, making it perhaps the most consumed beverage of the world, next to water. Several coffee varieties abound, including the Philippines' Arabica, Liberica, Robusta and Excelsa. Indeed, coffee may be considered as one of the most valuable primary products in world trade, crucial to the economies of several developing countries, like the Philippines, since its cultivation, processing, trading, transportation, and marketing provide employment for thousands of people. As a consequence of this great demand, however, large amounts of waste residues that translate to about 12 million tons (Rathinavelu and Graziosi, 2016), are left to rot, generating millions of tons of methane gas, which pose serious environmental and economic problems.

Coffee pulp, husk and spent are the main coffee industry residues, obtained during the wet and dry processing of coffee cherries, and roasting, to produce the commercial coffee that we drink from our cups. Attempts have been made in the past to utilize these