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**UTILIZATION OF SUGARCANE BAGASSE
FOR THE PRODUCTION OF PAPER**

**RESEARCH STUDY
APPLIED RESEARCH III**

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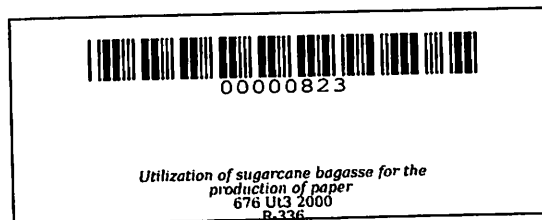
**CAVITE STATE UNIVERSITY
Indang, Cavite**

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**UTILIZATION OF SUGARCANE BAGASSE
FOR THE PRODUCTION OF PAPER**

**A Research Study presented to the
Faculty of Laboratory School,
College of Education,
Cavite State University,
Indang, Cavite**

**In partial fulfillment
of the requirements
for graduation**



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ABSTRACT

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The study entitled, "Utilization of Sugarcane Bagasse for the Production of Paper," was conducted in order to utilize sugarcane bagasse as a raw material for the production of paper. Specifically, the study aimed to: (a) use bagasse as an alternative for tree's cellulose fibers in commercial papermaking; (b) determine the potential of bagasse as substitute to cellulose fibers of trees in papermaking; and (c) determine which treatment will produce a better quality of paper out of sugarcane bagasse.

The study consisted of four phases: Preparation of Raw Materials, Processing of Paper, Product Evaluation & Data Gathering, and Data Analysis.

The papermaking process was conducted in a paper factory at Carasuchi, Indang, Cavite, from July to October 1999. The chemical used for the softening of the fibers was subjected to three treatments, each of which was replicated three times, and these are as follows: T₀, 100% caustic soda; T₁, 50% caustic soda & 50% baking soda; and T₂, 100% baking soda. One kilo of raw bagasse was used for each treatment

and replication. Each treatment produced six sheets of paper, two sheets per replication.

The sensory evaluation of papers was conducted on November 1999. A panel of twenty judges was selected from the Laboratory School of Cavite State University. The physical characteristics of papers produced from sugarcane bagasse (general appearance, texture, color, general acceptability) were rated with score ranging from 1-5 (1, being the lowest and 5, being the highest).

To or the control produced the best result. It garnered a mean score of 4.27 for general acceptability. It was followed by Treatment 1 with a mean score of 4.15 and treatment 2 having a 4.02 mean score for general acceptability.

In general, it revealed that sugarcane bagasse can serve as an alternative to tree's cellulose fibers in papermaking process. Papers treated with caustic soda as a softening agent still produced papers with the best quality.

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INTRODUCTION

Paper was derived from the word "papyrus", a reed plant that used to grow in the Nile Valley. It is made of cellulose fibers formed into sheets on a screen from water suspension. Papers were produced by chopping fibrous materials such as rags, straw, bark, wood and others. These were then sundried. Cellulose is the basic raw material in paper making, which occurs in the form of fiber in a wide variety of plants. Wood is the principal source of cellulose. It is associated with substantial amount of lignin, hemicellulose, and others. However, cellulose is also present in some straws and non - woody plants and even