

**PRODUCTION OF HANDMADE PAPER OUT OF DRAGON
FRUIT (*Hylociclus undatus*) PSEUDOSTEM**

Research Study

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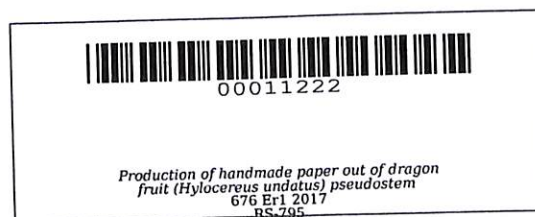
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PRODUCTION OF HANDMADE PAPER OUT OF DRAGON FRUIT
(*Hylocereus undatus*) PSEUDOSTEM

A Research Study
submitted to the Faculty of the
Science High School
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ABSTRACT

ERANA, JULIAN CEDRIC P., ITURRALDE, JOSEPH P. Production of Handmade Paper Out of Dragon Fruit (*Hylocereus Undatus*) Psuedostem. Applied Research III Science High School, College of Education, Cavite State University, Indang, Cavite, April 2017. Adviser: Dr. Teddy F. Tepora

The study entitled “Production of Handmade Paper out of Dragon Fruit (*Hylocereus undatus*) Psuedostem” was conducted at 339 Binambangan St. Indang Cavite to produce handmade papers from dragon fruit pseudostem. It aimed to determine the sensory and physical properties of the produced handmade paper out of dragon fruit psuedostem in terms of color, texture, level of acceptability, tearing strength, and general acceptability, and to determine which treatment produced the best quality of handmade paper.

The researcher used the following treatments in the conduct of their study; T₁ – 500 gm *Hylocereus undatus* pseudostems + 50 gm starch; T₂ – 500 gm *Hylocereus undatus* pseudostems + 150 gm starch; T₃ – 500 gm *Hylocereus undatus* pseudostems + 200 gm starch.

The dragon fruit pseudostems were washed. The thorns and its flesh were removed then were set out to dry. It was cut into small pieces then cooked in a caustic soda and water solution for 7 hours to dissolve the cellulose fibers and to separate the fibers. For the binder, water and starch solution were utilized and then mixed with the dragon fruit psuedostem. The researchers poured the mixture into a basin with water and then a silkscreen was suspended and a sheet of paper was formed. The wet papers were set out to dry on cheesecloth. The papers were evaluated by thirty participants based on

its color, texture, level of acceptability, tearing strength, and general acceptability with a sensory and physical evaluation sheet.

Based on the results of the study, the best treatment was T₃. It was evaluated to have brownish in color, moderately smooth in texture, moderately strong in tearing strength, and acceptable in general acceptability. The cost of production of handmade paper is three hundred twenty-nine (P329) pesos. Therefore the researchers recommend to produce handmade paper using dragon fruit pseudostem, use a more advanced process to improve the quality of the produced paper from dragon fruit pseudo stem, conduct experiment on the use of other materials and ingredient that will improve the quality of the handmade paper, and follow up studies about equally fibrous raw materials which has a potential utilized as paper are also highly recommended.

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INTRODUCTION

World's demand for paper has increased at an average annual rate of 4.7 percent over the past 40 years. Although future growth will reduce to 2–3 percent the existing wood resources may be inadequate to meet this growing demand for paper especially in the Asia-Pacific region and Eastern Europe. In addition, logging is coming under increasing pressure from environmentalists concerned about habitat destruction and other longer-term impacts of forest harvesting. It is, therefore, necessary to consider alternative fiber sources to meet the possible shortfall of wood fiber for papermaking. Suitable non-wood fibers are abundantly available in many countries and are the major source of fiber for papermaking in some developing nations. (Ashori, 2007)