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PRODUCTION OF ETHANOL FROM
BANANA (*Musa spp.*) PEELINGS

RESEARCH STUDY

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**PRODUCTION OF ETHANOL FROM
BANANA (*Musa spp.*) PEELINGS**

**A Research Study submitted to the
Faculty of Science High School
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**In partial fulfillment
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for graduation**



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ABSTRACT

CUBILLO, DANNIKA A., NOVICIO, JOYCE ELAINE P., OLOROSO, ROXANNE C. Applied Research III (General Science Curriculum), Cavite State University, Indang, Cavite, April 2005 “ **Production of Ethanol from Banana Peelings**”.

Adviser: Mr. Marvin V. Vicedo

The study entitled “Production of Ethanol from Banana Peelings” was conducted at the Food Processing Center of the Cavite State University, Indang, Cavite. The study aimed to: extract ethanol from banana peelings; determine the amount of ethanol derived from banana peelings; and determine its physical and chemical properties.

Eleven liters of banana peelings were used in the study. The banana peelings were boiled and the extracted juice was filtered using cheesecloth.

Results showed that the fermentation process and using simple distillation method could extract alcohol extracted from banana peelings. The alcohol content of the distilled solution was 61.4 percent. The alcohol extract has a boiling point of 80.5°C, which is higher than the boiling point of commercial ethanol. With the use of hydrometer, the specific gravity obtained was 0.88 and finally from this from this value the density was computed as 0.88g/mL.

Laboratory tests showed that ethanol had a pH of 3.0. The flammability test showed a positive result.

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INTRODUCTION

Bananas are familiar fruit, but the plants that produce them have some interesting peculiarities: although they grow quite large and upright, like a tree, with soft stems made up of rolled-up leaf stalks, each of the huge plants dies after producing one bunch of fruit.

There are 150 species of this family (*Musaceae*), all with pithy stems and great broad leaves. The flowers grow in a thick bunch at the end of the plant's large, hanging stalk. In cultivated varieties, fertilization is not necessary to produce fruit; therefore, the bananas that are commonly eaten have no seeds, since the flowers are never pollinated. But in the wild, bananas often contain black, stone like seeds. The elongated, thick-skinned fruit are classified botanically as either berries or capsules.

Ethanol or ethyl alcohol is a fuel from plants. It is from the fermentation of sugar or starch. It can be mixed with water, maybe added to unleaded gasoline to form gasohol, or used purely as fuel for cars.