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ALCOHOL FROM CASSAVA (*Manihot esculenta* L)
AS RUBBING ALCOHOL COMPOUND

RESEARCH STUDY

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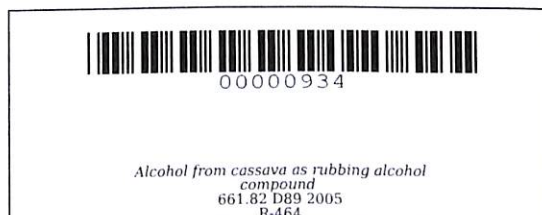
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**ALCOHOL FROM CASSAVA (*Manihot esculenta L*) AS
RUBBING ALCOHOL COMPOUND**

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ABSTRACT

DUMLAO, FRANCIS V.; FIDEL, MICHELLE M.; ROGACION, KHRISTINE PAULA A.; Applied Research III (General Science Curriculum) Cavite State University, Indang, Cavite, April, 2005 **“Alcohol from Cassava as Rubbing Alcohol Compound.”**

Adviser: Prof. Dulce L. Ramos

This research study, entitled “Alcohol from Cassava as Rubbing Alcohol Compound”, dealt with the production of rubbing alcohol from the extracted alcohol from cassava peelings. It was conducted to determine the amount of alcohol that could be produced from cassava peelings as well as the kind of the produced alcohol using physical and chemical tests. It also aimed to determine the physical and chemical properties of the alcohol produced and the sensory properties of the produced rubbing alcohol.

Cassava peelings (Binuboy Variety) were cleaned and boiled for 20 minutes to facilitate extraction. The extract was fermented, racked, and filtered for 6 weeks. At the racking process, the extract measuring a volume of 197 ml was distilled up to the boiling temperature of the solution and the percent yield of the alcohol was calculated as 27.41percent. The physical and chemical properties of alcohol extract were determined in terms of clarity, odor, boiling point, specific gravity, flammability and specific chemical test for the presence of alcohol. The sensory properties of the rubbing alcohol were also determined in terms of clarity, odor, and general acceptability.

The alcohol extract from cassava peelings was clear and had an alcohol-like smell. The boiling point of the produced alcohol was 79.3°C and its specific gravity was 0.91. These were determined using capillary method and hydrometer method,

respectively. The test for the presence of methyl alcohol did not show a positive result, which indicates that the produced alcohol is not methyl alcohol. However, the test for the ethyl and isopropyl alcohol showed positive result, which means that it is either an ethyl alcohol or an isopropyl alcohol. In the Lucas test, no layer was formed which means that the produced alcohol from cassava peelings is an ethyl alcohol. Flammability test showed slight flammability of the sample, which further indicates that the solution is an ethyl alcohol.

The rubbing alcohol compound was formulated in accordance with the different treatment combinations. The different treatments were laid out using Randomized Complete Block Design. Analysis of mean scores revealed that the control treatment is still the best among the other treatments in terms of clarity, odor and general acceptability. However, Treatment 3(30ml alcohol from cassava peelings + 69ml distilled water + 1ml perfume) is the most recommended among the produced rubbing alcohol from cassava peelings.

Based on the results of the study, alcohol from cassava can be utilized in the production of rubbing alcohol compound.

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By:

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A research study submitted to the faculty of the Science High School, College of Education, Cavite State University, in partial fulfillment of the requirements for graduation under the supervision of Prof. Dulce Ramos.

INTRODUCTION

Cassava (*Manihot esculenta* L.) is one of the most important food crops in the Philippines. Production of cassava in the farmer's field can be increased substantially using proper cultural management. However, the main problems in motivating farmers to increase cassava production are short life span and low market value of the crop. These problems call for the development of appropriate processing technologies to improve the storage life of these high perishable roots thus, making the production more stable and increasing its utilization for food and industrial uses. Cassava does not only serve as substitute for rice in many forms but also as major source of raw materials in the production of pasta, starch, flour and other carbohydrate rich containing food products.

For many years, researches were made in cassava especially in identifying its active components aside from its carbohydrates and alcoholic content. It has been found that among other root crops, cassava contains the highest fermentable materials that can be utilized in the production of alcohol. A variety of cassava, locally known as Binuboy,