

**EXTRACTION AND CHARACTERIZATION OF
ESSENTIAL OIL FROM CAMIA
(*Hedyotis Coronarium Koenig*)**

RESEARCH STUDY

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**EXTRACTION AND CHARACTERIZATION
OF ESSENTIAL OIL FROM CAMIA
(*Hedychium coronarium* Koenig.)**

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

**In Partial Fulfillment of the Requirements
for
Graduation**

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ABSTRACT

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Adviser: Mr. Emil L. Escalante and Mrs. Dulce L. Ramos

This study was conducted in the Physical Science Instrumentation Room, Physical Science Department, Cavite State University, Indang, Cavite and at the Standards and Testing Division, Industrial Technology Development Institute, Department of Science and Technology, Bicutan, Taguig, Metro Manila from September 1999 to February 2000. This study aims to extract and characterize the essential oil from camia rhizomes, leaves and stems. The clear, light yellowish color oil of the three camia parts was obtained by water distillation. The oil recovered from camia rhizomes obtained a percentage yield of 0.0861%. On the other hand, camia leaves yield 0.0706% and camia stems yield 0.0611%.

The physical and chemical properties of extracted essential oil from camia are as follows; density = 0.6000 g/ml (rhizomes); 0.9000 g/ml (leaves); 0.7000 g/ml (stems); specific gravity at 25°C = 0.6012 (rhizomes); 0.9018 (leaves); 0.7014 (stems); acid value = 0.0370 mol/g (rhizomes); 0.0193 mol/g (leaves); 0.0134 mol/g (stems); saponification value = 0.0238 mol/g (rhizomes); 0.0161 mol/g (leaves); 0.0079 mol/g (stems); ester value = 0.0132 mol/g (rhizomes); 0.0032 mol/g (leaves); 0.0055 mol/g (stems). A chemical analyst at the Standards and Testing Division, Department of Science and Technology, Bicutan, Taguig, Metro Manila did thin-layer chromatographic analysis of oil. Alpha-pinene, citral and

eugenol were found to be present in the extracted essential oil from camia rhizomes. In the other hand, α -pinene, citronellal, citronellol and geraniol were observed present in the extracted essential oil from camia stems. Citral, citronellal, citronellol and geraniol were likewise indicated to be present in the oil of camia leaves.

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A research study presented to the faculty of the Laboratory School, General Science Curriculum, College of Education of the Cavite State University, Indang, Cavite in partial fulfillment of the requirements for graduation under the supervision of Mr. Emil L. Escalante and Mrs. Dulce L. Ramos.

INTRODUCTION

Camia (*Hedychium coronarium* Koenig.) is a terrestrial erect herb with elongated leafy stems from stout, fleshy rootstocks or rhizomes. This plant grows from 0.4 to 1 meter in height. Its leaves are distichous, sessile or shortly petioled, ligulate, oblong to linear-oblong or lanceolate, acuminate. Its flowers are spikes or sessile along a simple undivided axis, white in color, pale yellow in the center and are very fragrant (Encyclopedia of Horticulture, 1985).

With the properties of this plant and since essential oil may occur in the bark, roots, leaves or other parts of the plants, there is a great possibility that essential oil can be extracted in this plant. This oil is produced during some metabolic processes of the plants and is secreted or excreted as odoriferous by-products (Anzaldo, 1987).

The country abounds in flora, which are potential sources of essential oils. Unfortunately, the essential oil industry is non-existent. At present, most of the essential oils needed by the local industries are imported from abroad. There is also a bright market