

**EXTRACTION OF ESSENTIAL OIL FROM ROSE (*Rosa*
centrifolia) USING HYDRO - STEAM DISTILLATION
AND SOLVENT EXTRACTION**

A RESEARCH STUDY

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**EXTRACTION OF ESSENTIAL OIL FROM ROSE (*Rosa centrifolia*)
USING HYDRO-STEAM DISTILLATION AND SOLVENT
EXTRACTION**

**A Research Study Presented to the Faculty
of the Laboratory School, College of Education
Cavite State University
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**In Partial Fulfillment
of the Requirements
for Graduation**

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(Rosa centrifolia) using hydro-steam
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ABSTRACT

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Adviser: Prof. Gliceria Masicap

The study **“Extraction of Essential Oil From Rose (*Rosa centrifolia*) Using Hydro-steam Distillation and Solvent Extraction”** was done to determine the possibility of extracting essential oil using two processes. The objectives of the study were to determine which process between hydro-steam distillation and solvent extraction will give high percentage yield of oil; determine the physical and chemical properties of the extracted essential oils and identify the chemical composition of the oils extracted from the two processes.

Two and a half kilograms of samples were separated into 1.5:1 ratios and was subjected into hydro-steam distillation and solvent extraction processes. Water and ethyl alcohol were used as solvents for the two processes, respectively.

Hydro-steam distillation gave a higher percentage yield that is 0.505% than solvent extraction that yielded 0.405%.

The oils extracted from hydro-steam distillation and solvent extraction were tested for its physical properties. The following results were obtained: both oils were light colored and transparent liquids with floral scent, the specific gravity were 0.7927 and 0.7051, respectively. Both oils showed solubility in 1.5 ml of alcohol and the refractive indices were 1.4100 and 1.4120, respectively.

Chemical tests were also done to the oil obtained from hydro-steam distillation and solvent extraction. It showed that the acid values were 5.91 and 5.76, respectively, while the ester values were 9.97 and 5.30, respectively.

Thin-layer chromatographic analysis showed the presence of six spots for oil extracted from hydro-steam distillation and five spots for oil from solvent extraction. From Rf values, citronellal and citronellol were identified. Other spots observed cannot be identified using the standards.

Based from the findings, solvent extraction can be considered the better process of extracting oil from rose.

Therefore, oil can be extracted from rose petals using hydro-steam distillation and solvent extraction.

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A research study submitted to the faculty of the Laboratory School, College of Education, Cavite State University in partial fulfillment of the requirements for graduation. The study was conducted under the guidance of Prof. Gliceria Masicap and Prof. Dulce Ramos.

INTRODUCTION

Rosa centrifolia popularly known as Rose belongs to the family of Rosaceae and make up the genus Rosa. They are universally known for their beauty and many garden uses. These prickly shrubs may be grown in any location that is sunny, has reasonably good drainage and is away from tree roots. They grow abundantly in the Philippines, not only for home gardens but also for commercial and institutional landscape. In fact, they could be the source of livelihood of some growers.

Considered the world's oldest and most decorative horticultural plant, they also have economic importance. The fruits of a few species are used in preserving and the flowers of *Rosa alba* and *Rosa damascena* are used in perfumes and rose water.

Essential oil can be obtained from these cut flowers. Natural essential oils are volatile, fragrant and pleasant tasting oils obtained from fruits, leaves, roots and flowers.