

**PHYSICO-CHEMICAL ANALYSIS AND ANTIMICROBIAL
PROPERTIES OF SPINACH OIL EXTRACT AND
ITS EFFECTIVENESS AS AN OINTMENT**

A Research Study
Submitted to the Faculty of the
Science High School, College of Education
Cavite State University
Indang, Cavite

In partial fulfillment of the requirements
for graduation

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April 2013

ABSTRACT

AUTOR, J. L, DILIG, L. M. & HERRERA, R. V. Physico-chemical Analysis and Antimicrobial Properties of Spinach Oil Extract and its Effectiveness as an Ointment. Research Study. (General Science Curriculum). Science High School, College of Education, Cavite State University, Indang, Cavite. April 2013. Adviser: Prof. Ma. Corazon V. Herrera.

The study entitled "Physico-Chemical Analysis and Antimicrobial Properties of Spinach Oil Extract and Its Effectiveness as an Ointment" was conducted at the Physical Science Department and Biological Science Department of Cavite State University and at the Department of Science and Technology Bicutan, Taguig City. This study evaluated the physical properties of the ointment from spinach oil extract, the chemical and antimicrobial properties of the spinach oil extract and the acceptability of the result product as an ointment. It aimed to determine: (1) the percentage yield of the spinach oil extract; (2) the physical properties of the spinach oil extract in terms of pH value and specific gravity; (3) the chemical properties of the spinach oil extract in terms of acid value and Saponification number; (4) the antimicrobial properties of the spinach oil extract in terms of bioassay and assay method; (5) the sensory properties of the ointment from spinach oil extract; and (6) the functional groups present in the spinach oil extract.

The different treatments used were: T₁- 1g of spinach oil extract and 10g of beeswax; T₂- 2g of spinach oil extract and 10g of beeswax; and T₃- 3g of spinach oil extract and 10g of beeswax.

The samples of spinach ointment were presented to 15 respondents for evaluation. Color, odor, texture and general acceptability were significantly different because these

attributes were significantly affected by increasing proportion of spinach oil extract and beeswax.

Results of the study show that the best treatment based on sensory properties was T₂ (3g of spinach oil extract and 10g of beeswax). T₂, green in color, fairly oily, and had moderately pleasant odor, and acceptable based on general acceptability. Results also show that T₃ (3g of spinach oil extract and 10g of beeswax) was the most effective in curing wounds since it had the least number of days in curing wounds and had the most amount of spinach oil extract among the three treatments.