

**ANTIBACTERIAL ACTIVITY OF THE PRODUCED DEODORANT
CREAM INFUSED WITH GUAYA LEAF EXTRACT**

Research Study

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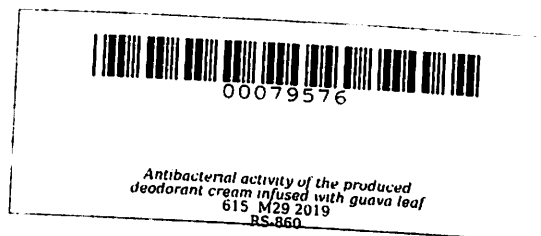
**Science High School
CAVITE STATE UNIVERSITY
Indang, Cavite**

May 2019

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

**In partial fulfillment of the requirements
for Research III**



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May 2019**

ABSTRACT

MALABANAN, JAMAICA MAE D., SIDAMON, HANNAH CHARSEN T., SOL CRUZ, CHRISTIAN PAUL R. Antibacterial Activity of Produced Deodorant Cream Infused With Guava Leaf Extract. Research Study. Laboratory Science High School. Cavite State University, Indang, Cavite. May 2019. Adviser: Ms. Arvie Grace B. Masibag.

This study was conducted from November 2018 to January 2019 at Department of Biological Sciences, College of Arts and Sciences, Cavite State University. Specifically, the study aimed to: 1. determine the physical properties of the deodorant cream in terms of color, odor, texture and general acceptability; 2. determine the effectiveness of the produced deodorant cream with guava leaf extract and whitening ingredients against *Pseudomonas aeruginosa* and *Staphylococcus epidermidis*; and 3. determine the most effective treatments among the other treatments. Experimental research was used in the study. Making of deodorant cream, testing the inhibitory activity of the product against the said bacteria, and evaluation of the physical properties and general acceptability of the soap by the respondents were accomplished to gather data.

The inhibitory activity of the produced deodorant cream against *S. epidermidis* showed a highly significant difference among treatment means which indicates that the amount of guava leaves extract and whitening ingredients affect the bacterial growth. On the other hand, inhibitory activity of the produced deodorant cream against *P. aeruginosa* showed significant difference but not that significant compared to *S. epidermidis*.

In terms of the deodorant's inhibitory activity against *S. epidermidis* and *P. aeruginosa*, Treatment 8 (5mL of 20 guava leaves extract + honey) is the most effective among all the other treatments. Based on the observations of the thirty randomly selected

respondents who evaluated the products, with regards to the color, Treatments 0 (control treatment), 1 (5mL of 10 Guava Leaves), 2 (5mL of 10 Guava Leaves+ Oatmeal), 4 (5mL of 10 Guava Leaves+ Lemon juice), 6 (5mL of 20 Guava Leaves) and 7 (5mL of 20 Guava Leaves+ Oatmeal) were interpreted as white, Treatments 3 (5mL of 10 Guava Leaves+ of Honey), 8 (5mL of 20 Guava Leaves+ Honey) and 9 (5mL of 20 Guava Leaves+ Lemon juice) were interpreted as warm ivory while Treatments 5 T₅ (5mL of 10 Guava Leaves+ malunggay) and 10 (5mL of 20 Guava Leaves+ Malunggay) were interpreted as parakeet green. In terms of odor, all treatments were pleasant except Treatment 10 (5mL of 20 Guava Leaves+ Malunggay) which was unpleasant and Treatment 0 (control treatment) which was interpreted as very pleasant. In terms of texture, Treatment 0 (control treatment) was interpreted as very smooth while the other treatments were interpreted as smooth. For general acceptability, all treatments were acceptable except to Treatment 0 (control treatment) which was interpreted as highly acceptable.

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A research project submitted to the faculty of the Laboratory Science High School, College of Education, Cavite State University, Indang, Cavite in partial fulfillment of the requirements for Research III. Prepared under the supervision of Ms. Arvie Grace B. Masibag.

INTRODUCTION

Human body has two main types of sweat glands, both types are odorless, but the type of sweat produced in the armpits and groin smells bad when it was combined with bacteria found normally on your skin. The “sweat” glands also known as eccrine glands, are abundant over most of the body, and are capable of secreting their aqueous solution. These secrete a mildly aromatic substance, the functions of which are variously considered to be an emollient to the stratum corneum, a bacteriostatic and fungistatic agent (The Editors of Encyclopedia Britannica, 2019). Bacteria such as *Pseudomonas aeruginosa* (*P. aeruginosa*) and *Staphylococcus epidermidis* (*S. epidermidis*) are isolated prevalently from humans and are common bacteria that are capable of infecting humans (Alhazmi, 2015). The presence of these bacteria will be lessen by using deodorant, a chemical that prevents or reduces axillary malodor which results from bacterial breakdown of perspiration from eccrine and apocrine sweat glands(Chessa *et al.*, 2015).