

**SYNERGISTIC ANTI INFLAMMATORY EFFICACY OF PINEAPPLE AND
WATERMELON ON ACUTE AND CHRONIC INFLAMMATION INDUCED
IN MICE**



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(PHYSIOLOGY/ PHARMACOLOGY TECHNIQUES)

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**AN UNDERGRADUATE PROJECT WORK SUBMITTED TO THE
DEPARTMENT OF SCIENCE LABORATORY TECHNOLOGY, FACULTY
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AWARD OF BACHELOR OF SCIENCE (B.SC.) DEGREE IN SCIENCE
LABORATORY TECHNOLOGY**

OCTOBER, 2025

CERTIFICATION

This is to certify that this research titled “**SYNERGISTIC ANTI INFLAMMATORY EFFICACY OF PINEAPPLE AND WATERMELON ON ACUTE AND CHRONIC INFLAMMATION INDUCED IN MICE**” was carried out by “**Miss Faith EMEFIELE**” with matriculation number “**LSC2009927**” and presented to the Department of Science Laboratory Technology, Faculty of Life Sciences, University of Benin, Benin City; in partial fulfillment of the requirements for the award of Bachelor of Science (B.Sc.) in Science Laboratory Technology.

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DEDICATION

This project work is dedicated to the Almighty God for his grace and mercies and to my family for their support and love throughout my period of study.

ACKNOWLEDGEMENTS

I sincerely appreciate my project supervisor Dr. P. O. Obaro for his patience, academic fatherly mentorship, patience and invaluable guidance throughout the period of my project research God bless you.

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ABSTRACT

Inflammation is a protective biological response, but when uncontrolled it contributes to chronic diseases. Conventional anti-inflammatory drugs such as NSAIDs and corticosteroids, although effective, are often limited by adverse effects with long-term use. This study evaluated the synergistic anti-inflammatory activity of pineapple (*Ananas comosus*) and watermelon (*Citrullus lanatus*) juice as a potential safer alternative. Fresh juices were prepared and administered to albino mice at doses of 10 and 20 ml/kg after acute toxicity testing. Anti-inflammatory activity was assessed using formalin-induced paw oedema, egg albumin-induced oedema, and carrageenan-induced oedema models. The combination significantly reduced inflammation in a dose-dependent manner across all models, with effects in some cases comparable to ibuprofen and aspirin. No signs of severe toxicity or mortality were observed. The observed activity is attributed to the combined actions of bromelain, lycopene, and L-citrulline, which modulate oxidative stress and inflammatory mediators. These findings suggest that pineapple and watermelon juice may serve as a safe and affordable functional food-based intervention in managing inflammatory conditions

