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

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BENIN CITY

(PHYSIOLOGY/ PHARMACOLOGY TECHNIQUES)

OCTOBER, 2025

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AN UNDERGRADUATE PROJECT WORK SUBMITTED TO THE DEPARTMENT OF SCIENCE LABORATORY TECHNOLOGY, FACULTY OF LIFE SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, EDO STATE, NIGERIA; IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR 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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(Project supervisor)

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DR P.O ALONGE **DATE**

(Project Coordinator)

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PROF J.O OSARUMWENSE **DATE**

(Head of Department)

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(External Examiner) **DATE**

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

1 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.

I want to thank God Almighty for his awesome love, mercy and strength. My sincere appreciation goes to preterm dean of Faculty of Science Laboratory Technology Prof. J. O. Osaruwense. I want to also thank my lecturers for their mentoring throughout my stay in this school for their assistance during the course of this project.

I will also like to appreciate my parent: Mr. and Mrs. Emefiele, I will not fail to appreciate my friends and course mates: Jenifer and Lima who has contributed in one way or the other to the success of the work, God bless you all.

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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