

**FERMENTATION OF BUTTERFLY PEA FLOWER (*CLITORIA TERNATEA*)
EXTRACT USING BAKER'S YEAST (*SACCHAROMYCES CEREVISIAE*):
IMPACTS ON VISCOSITY, CHEMICAL COMPOSITION, AND SENSORY
ATTRIBUTES**

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

FERMENTATION OF BUTTERFLY PEA FLOWER (*CLITORIA TERNATEA*) EXTRACT USING BAKER'S YEAST (*SACCHAROMYCES CEREVISIAE*): IMPACTS ON VISCOSITY, CHEMICAL COMPOSITION, AND SENSORY ATTRIBUTES

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This study investigated the impact of fermentation with *Saccharomyces cerevisiae* on the physicochemical, metabolic, and sensory properties of butterfly pea flower (*Clitoria ternatea*) extracts sourced from Cianjur and Pamulang, Indonesia. The primary goal was to improve the extract's properties as a food colorant. The ideal fermentation parameters were a 5.5% yeast concentration for 14 days. Key analyses included viscosity, total titratable acidity (TTA), color stability, GC-MS metabolite profiling, and sensory evaluation.

The findings revealed that fermentation significantly increased TTA through the production of organic acids. In viscosity, it decreased in the unconcentrated state but significantly increased upon concentration due to the formation of glycerol. Metabolite analysis confirmed a clear shift from a sugar-based profile to one rich in fermentation byproducts. While fermentation enhanced color stability in acidic conditions (pH 3-5), it did not prevent degradation at a neutral pH. Sensory analysis showed no significant difference in overall preference, though the color of the unfermented extracts was preferred.

Keywords: *Clitoria ternatea*, *Fermentation*, *Saccharomyces cerevisiae*, *Anthocyanin*, *Viscosity*, *Metabolomics*



DEDICATION

I dedicate this work to my family, university, lecturers, and the future of my country,
Indonesia



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