

**TASTE IMPROVEMENT & NUTRIENT ANALYSIS  
OF OVERRIPE TEMPE EXTRACT**

By  
James Emmanuel Tanuwihardja  
11505009

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SWISS GERMAN UNIVERSITY  
The Prominence Tower  
Jalan Jalur Sutera Barat No. 15 Alam Sutera  
Tangerang, Banten 15143 - Indonesia

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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.

James Emmanuel Tanuwihardja

Student

Approved by:

\_\_\_\_\_

Date

Maria D.P.T. Gunawan-Puteri, STP, M.Sc, Ph.D

Thesis Advisor

\_\_\_\_\_

Date

Dr. Irvan Setiadi Kartawiria, S.T., M.Sc.

Thesis Co-Advisor

\_\_\_\_\_

Date

Dr. Dipl. -Ing. Samuel P. Kusumocahyo

Dean

\_\_\_\_\_

Date

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James Emmanuel Tanuwihardja

## ABSTRACT

### TASTE IMPROVEMENT & NUTRIENT ANALYSIS OF OVERRIPE TEMPE EXTRACT

By

James Tanuwihardja

Maria D.P.T. Gunawan-Puteri, STP, M.Sc, Ph.D, Advisor

Dr. Irvan Setiadi Kartawiria, S.T., M.Sc., Co-Advisor

SWISS GERMAN UNIVERSITY

Overripe tempe is highlighted for its natural umami taste. The umami taste come from its amino acid composition, particularly due to glutamic acid and aspartic acid. Enzymatic hydrolysis of protein in overripe tempe could improve umami taste intensity. However, enzymatic hydrolysis of overripe tempe also could produces bitter taste due to its amino acid composition. Papain enzyme was chosen through selection of enzyme for enzymatic hydrolysis process in overripe tempe extraction. Intensity test and affective test were conducted to find the effect of enzymatic hydrolysis and addition of  $\beta$ -cyclodextrin as bitter blocker to umami, salty and bitter taste of overripe tempe extract. Furthermore, acceptance level of overripe tempe extract was analyzed. Enzymatic hydrolysis with papain enzyme improve the umami taste of overripe tempe extract. Moreover, acceptance level increased along with increase of umami intensity. Addition of  $\beta$ -cyclodextrin does not significantly decrease bitter level in overripe tempe extract. Overripe tempe powder could serve as a source for protein, dietary fiber and certain minerals that has been analysed. Overripe tempe extract also provide high protein and iron particularly among others.

*Keywords: overripe tempe, sensory, umami, bitter, nutreints, dietary fiber, protein, enzymatic hydrolysis*



## DEDICATION

I dedicate this works to God, who strengthen and bless me  
throughout this thesis progress,  
to my lecturers and family, who always supported  
and helped me through all obstacles during this thesis making,  
to all my wonderful friends,  
who encouraged me from the beginning until this thesis in finished on time,  
and for a better future.



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