CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT REPORT

MUNG BEAN FLOUR AS THE MAIN INGREDIENT FOR MAKING HIGH PROTEIN AND HIGH MINERAL SNAKEHEAD FISH CRACKERS



ARRANGED BY EMMANUELLA MICHELLE ANDREA OENTORO 2374130010011

CULINARY ARTS STUDY PROGRAM
OTTIMMO INTERNATIONAL
MASTER GOURMET ACADEMY
SURABAYA

2025

PLAGIARISM STATEMENT

I guarantee that this assignment is entirely original, based on my own research and study, and that I have cited all relevant sources and materials, including books, papers, reports, lecture notes, and any other type of paper, internet communication, or private correspondence. Additionally, I certify that I have not previously submitted this assignment or report for evaluation in any other unit, unless all unit coordinators have given their express consent, or at any other point during this unit, and that I have not plagiarized, in whole or in part, the work of other students or individuals.

On the basis of this declaration, I agree to assume the risk of any penalties that may be applied to me in line with applicable laws in the event that there is a future violation of scientific fraud ethics or if you have a dispute over the veracity of my work.

Surabaya, July 25th, 2025

Emmanuella Michelle A. O.

APPROVAL 1

CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT PROJECT

Name : Emmanuella Michelle Andrea Oentoro

Place, Date of Birth : Semarang, December 7th 2005

NIM : 22374130010011 Study Program : D3 Culinary Art

TITLE : MUNG BEAN FLOUR AS THE MAIN

INGREDIENT FOR MAKING HIGH PROTEIN AND HIGH MINERAL SNAKEHEAD FISH

CRACKERS

This paper has been approved by:

Head of Culinary Arts Study Program, July 25th, 2025

Advisor,

July 25th, 2025

Henri Admanata, S.TP., M.Sc

NIP. 19900613 1402 016

Windi Habsari, S.T., M.T.

NIP. 19960830 2303 019

Director of

Ottimmo International Master Gourmet Academy

ly Iskandar, B.Sc. 19731025 1201 001

APPROVAL 2

MUNG BEAN FLOUR AS THE MAIN INGREDIENT FOR MAKING HIGH PROTEIN AND HIGH MINERAL SNAKEHEAD FISH CRACKERS

Culinary Innovation and New Product Development report by:

Emmanuella Michelle Andrea Oentoro 2374130010011

This report is already presented and pass the exam on: (July 18th, 2025)

This paper has been approved by:

Advisor : Windi Habsari, S.T., M.T.

1st Examiner : Heni Adhianata, S.TP., M.Sc

2nd Examiner : Ryan Yeremia Iskandar, S.S.

PREFACE

Thanks to God's grace and blessings, I was able to write and compose this report on Culinary Innovation and Development well and finish it on time.

I would also like to take this opportunity to thank:

- 1. Chef Zaldy Iskandar, B. Sc as director of Ottimmo International Master Gourmet Academy.
- 2. Ms. Windi Habsari, S.T., M.T. as my CnD advisor who always guides and supports me throughout the entire process of writing and composing this report.
- 3. Ms. Heni Adhianata, S.TP., M.Sc as my head of study program of Ottimmo International Master Gourmet Academy.
- 4. My parents, who never fail to encourage me and give me material also moral assistance.
- 5. My friend, who has helped me every step of the way as I've worked on this report.

Finally, I want to express my regret if my report has any typographical errors. I genuinely hope that anyone who reads this report will find it helpful and advantageous. Thank you.

Surabaya, July 25th, 2025

Emmanuella Michelle A. O.

ABSTRACT

Mung bean and snakehead fish crackers are made from mung bean flour and ground snakehead fish, steamed, sun-dried, and fried to achieve a light and crispy texture. This product provides a healthier alternative to traditional crackers, which are frequently low in nutrients and high in fat, by combining animal-based protein from snakehead fish with plant-based protein from mung beans. Both ingredients are rich in essential nutrients such as fiber, amino acids, and minerals like potassium and iron. The result of this study showed that the crackers received positive feedback in terms of appearance, taste, and texture, with a score of 211 out of 250 in sensory testing. The use of proper steaming and drying methods helped retain nutrients and improve texture. Nutritional analysis revealed that each serving (around 10 pieces or 20 grams) contains 50 kcal, 3.35 grams of protein, and 10.36 grams of carbohydrates. In addition, the selling price of mung bean and snakehead fish crackers is Rp37,000 per pack.

Keywords: Crackers, Frying, Mung bean, Snakehead fish, High-protein snack, High in mineral

TABLE OF CONTENT

Plagiarism Statement	ii
Approval 1	iii
Approval 2	iv
Preface	V
Abstract	vi
Table of Content	vii
List of Figures	ix
List of Tables	X
Chapter I Introduction	1
1.1 Background Of The Study	1
1.2 Objectives Of The Study	2
Chapter II Literature Review	3
2.1 Ingredients Review	3
2.1.1 Mung Bean Flour	3
2.1.2 Snakehead Fish	5
2.2 Product Review	6
2.3 Process Review	7
2.3.1 Steaming	7
2.3.2 Frying	8
Chapter III Method	10
3.1 Time And Place	10
3.2 Ingredients And Utensils	10
3.2.1 Ingredients	10
3.2.2 Utensils	10
3.3 Processing Methods	11
3.4 Flow Chart	12
Chapter IV Result and Discussion	13

4.1 Product Result	13
4.2 Nutrition Fact	14
4.2.1 Nutrition Table	14
4.2.2 Nutrition Calculation	15
4.2.3 Nutrition Label	16
4.3 Food Safety And Packaging	16
4.3.1 Processing And Storage Temperature	16
4.3.2 Shelf Life	17
4.3.3 Product Packaging	18
4.4 Financial Aspects	21
4.4.1 Product Cost	21
4.4.2 Selling Price	22
Chapter V Conclusion and Suggestion	23
5.1 Conclusion	23
5.2 Suggestion	23
Bibliography	24
Annendix	26

LIST OF FIGURES

Figure 2.1 Mung Bean Flour	.3
Figure 2.2 Snakehead Fish	.5
Figure 3.1 Flow Chart Mung Bean and Snakehead Fish Crackers	.12
Figure 4.1 Mung Bean and Snakehead Fish Cracker	13
Figure 4.2 Nutrition Fact.	15
Figure 4.3 Aluminium Standing Pouch	19
Figure 4.4 Packaging Design.	.20
Figure 4.5 Logo Design.	20

LIST OF TABLES

Table 2.1 Nutritional Value of Steamed Mung Bean	4
Table 2.2 Nutritional Value of Steamed Snakehead Fish.	6
Table 3.1 Ingredients for Mung Bean Snakehead Fish Crackers	10
Table 3.2 Utensils for Mung Bean Snakehead Fish Crackers	10
Table 4.1 Nutritional Value of 50 gr of Mung Bean.	14
Table 4.2 Nutritional Value of 50 gr Snakehead Fish.	14
Table 4.3 Nutrition Calculation of Mung Bean and Snakehead Fish Cracker.	15
Table 4.4 Cost of Ingredients	2
Table 4.5 Cost of Packaging.	21