

**CULINARY INNOVATION AND NEW PRODUCT  
DEVELOPMENT REPORT  
UTILIZATION OF NUTMEG AS A FLAVOR ENHANCER  
FOR BEER FERMENTATION**



**ARRANGED BY  
SHELIN ANGELINA TAN  
2174130010057**

**CULINARY ARTS STUDY PROGRAM  
OTTIMMO INTERNATIONAL  
MASTERGOURMET ACADEMY  
SURABAYA  
2023**

## PLAGIARISM STATEMENT

I certify that this assignment/report is my own work, based on my personal study and/or research and that I have acknowledged all material and sources used in its preparation, whether they be books, articles, reports, lecture notes and any other kind of document, electronic or personal communication. I also certify that this assignment/report has not previously been submitted for assessment in any other unit, except where specific permission has been granted from all unit coordinators involved, or at any other time in this unit, and that I have not copied in part or whole or otherwise plagiarized the work of other student and/or person.

With this statement, I am ready to bear the risk/ any sanctions imposed to me in accordance with applicable regulations, if in the future there is a breach of scientific ethics, or there is a claim against the authenticity of my work.

Surabaya, 10 October 2023



Shelin Angelina Tan

**APPROVAL 1**  
**CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT**  
**PROJECT**

Name : Shelin Angelina Tan  
Place, Date of Birth : Nabire, 16 Juli 2003  
NIM : 2174130010057  
Study Program : D3 Culinary Art  
TITLE : UTILIZATION OF NUTMEG AS A FLAVOR  
ENHANCER FOR BEER FERMENTATION


**This paper is approved by:**


Head Culinary Arts Study Program,

Advisor,

Date: 10 October 2023

Date: 10 October 2023

  
Heni Adhinata, S.TP., M.Sc


  
Ryan Yerima Iskandar, SS

NIP. 19900613 1402 016

NIP: 198212181601023

Director of

Akademi Kuliner dan Patiseri OTTIMMO Internasional

Date: 10 October 2023  
  
Ryan Yerima Iskandar, B.Sc  
NIP. 19731025 1201 001

**APPROVAL 2**

**UTILIZATION OF NUTMEG AS A FLAVOR ENHANCER FOR BEER  
FERMENTATION**

Culinary Innovation and New Product Development report by:

**SHELIN ANGGELINA TAN**

**2174130010057**

This report is already presented and pass the exam on :

3 Oktober 2023

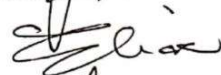
Examiners:

Examiner 1 : Ryan Yeremia Iskandar,SS



.....

Examiner 2 : Elinar,SST.Par.,M.Si. Par.



.....

Examiner 3 : Yohana Prasetio,S.Sn,A.Md.  
par



.....

## PREFACE

First and foremost, praise to the Almighty Jesus Christ for his full blessings which allow me to accomplish my Culinary Innovation and New Product Development Report with the topic of “Utilization Of Nutmeg As A Flavor Enhancer For Beer Fermentation” This Culinary Innovation and New Product Development Report is submitted to fulfill the requirement for a diploma degree of Study Program of Culinary Arts, Ottimmo International Master Gourmet Academy.

I realize that this report is far from perfection and there remains many lacks. I am open to any suggestions and critics upon this report in order to make better work in the future. Hopefully, this report could make a difference in the upcoming generation and benefit for both readers and development in culinary art field.

Surabaya, 10 October 2023



Shelin Anggelina Tan

## ABSTRACT

Beer is an alcoholic beverage produced by extracting raw materials with water, boiling and fermenting them. In some countries, beer is defined by law in Germany, where the raw materials, besides water, are malt, hops, and yeast. Beer is the most consumed alcoholic beverage in the world, and possibly the oldest. In addition, beer is also the third most popular drink in the world, after water and tea. The alcohol content of beer usually ranges between 4 and 6%.

Nutmeg (*Myristica Fragran* Haite) is a fruit plant in the form of a tall tree native to Indonesia, because this plant originates from Banda and Maluku. Nutmeg flesh is the largest part of fresh nutmeg, which is around 80%, but only a small part has been used, most of it is only disposed of as agricultural waste. Nutmeg flesh has the potential to be processed into various food products. Various well-known products include candied nutmeg, nutmeg syrup, jam, lunkhead and so on. Processing nutmeg flesh into food products will increase the economic value of nutmeg flesh which has only been waste so far.

Beer with nutmeg flavor is one of the solutions from the nutmeg waste that is produced, beer with nutmeg flavor is a beer product with a new flavor variant in Indonesia which has many health benefits if consumed in the right dose

***Keywords:*** *Barley, Beer, Fermentation*

## TABLE OF CONTENTS

<b>Plagiarism Statement</b> .....	<b>i</b>
<b>Approval 1</b> .....	<b>ii</b>
<b>Approval 2</b> .....	<b>iii</b>
<b>Table Of Contents</b> .....	<b>vi</b>
<b>List Of Figure</b> .....	<b>viii</b>
<b>List Of Tables</b> .....	<b>ix</b>
<b>Chapter I Introduction</b> .....	<b>1</b>
1.1 Background Of Study .....	1
1.2 The Objectives Of The Study .....	3
<b>Chapter II Literature Review</b> .....	<b>4</b>
2.1 Nutmeg .....	4
2.1.1 Barley.....	5
2.2 Beer.....	7
2.3 Fermentation.....	8
<b>Chapter III Methods</b> .....	<b>9</b>
3.1. Time And Place .....	9
3.2. Ingredients And Utensils .....	9
3.2.1 Ingredients .....	9
3.2.2 Utensils .....	9
3.3 Processing Methods.....	10
3.4 Flow Chart .....	12
<b>Chapter IV Result And Discussion</b> .....	<b>13</b>
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.....	15
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 (Variable Cost, Overhead Cost, Fixed Cost.....	21
4.4.2 Selling Price.....	24
<b>Chapter V Conclusion Ang Suggestion .....</b>	<b>25</b>
5.1 Conclusion.....	25
5.2 Suggestion .....	25
<b>Bibliography</b>	
<b>Appendix</b>	



## LIST OF FIGURE

<b>Figure 3. 1</b> Flowchart fermentation beer.....	12
<b>Figure 4. 1</b> Nutrition Facts of Beer .....	15
<b>Figure 4. 2</b> Glass bottles 500ml.....	19
<b>Figure 4. 3</b> Logo.....	20

## LIST OF TABLES

<b>Table 3. 1</b> Ingredirnts for Beer .....	9
<b>Table 3. 2</b> Utensils for Beer.....	9
<b>Table 4. 1</b> Nutrition Value Barley per 100 g .....	14
<b>Table 4. 2</b> Nutrition Value Nutmeg per 100 g.....	14
<b>Table 4. 3</b> Nutritional Value of Ingredients used in The Recipe for beer .....	15
<b>Table 4. 4</b> Start-Up Capital.....	21
<b>Table 4. 5</b> Labour cost.....	22
<b>Table 4. 6</b> Packaging Cost.....	22
<b>Table 4. 7</b> Utility Cost .....	22
<b>Table 4. 8</b> Raw Material Cost.....	23
<b>Table 4. 9</b> Rent Cost .....	23