

**CULINARY INNOVATION AND NEW PRODUCT
DEVELOPMENT REPORT**

**UTILIZING CAROB AND BEETROOT AS A SYRUP
ALTERNATIVE FOR PREGNANT WOMEN AND
CHILDREN**



**ARRANGED BY
RENALDI PUTRA SETHIO
2274130010070**

**CULINARY ARTS STUDY PROGRAM
OTTIMMO INTERNATIONAL
MASTERGOURMET ACADEMY
SURABAYA
2024**

PLAGIARISM STATEMENT

I certify that this assignment is my own work, based on my personal study and 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 students and/or persons.

On 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 you have a claim against the authenticity of my work.

Surabaya, October 2nd 2024



Renaldi Putra Sethio



APPROVAL 1

CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT PROJECT

Name : Renaldi Putra Sethio
Place, Date of Birth : Weetabula, 12 April 2003
NIM : 2274130010070
Study Program : D3 Culinary Art
TITLE : UTILIZING CAROB AND BEETROOT AS A
SYRUP ALTERNATIVE FOR PREGNANT
WOMEN AND CHILDREN

This paper has been approved by:

Head of Culinary Arts Study Program,
(October 2nd, 2024)

Henti Adhianata, S.TP.,M.Sc

NIP. 19900613 1402 016

Advisor,
(October 2nd, 2024)


Jessica Hartan, A.Md. Par

NIP. 19940923 2201 084

Director of
Ottimmo International Master Gourmet Academy




Zaldy Iskandar, B.Sc
NIP. 19731025 1201 001

APPROVAL 2

UTILIZING CAROB AND BEETROOT AS A SYRUP ALTERNATIVE FOR PREGNANT WOMEN AND CHILDREN

Culinary Innovation and New Product Development report
by:

RENALDI PUTRA SETHIO

2274130010070

This report is already presented and pass the exam on:

(August 18th, 2024)

This paper has been approved by:

Advisor : Jessica Hartan, A.Md. par.

1st Examiner : Elma Sulistya, S.TP., M.Sc.

2nd Examiner : Gilbert Yanuar Hadiwirawan, A.Md. Par.



.....
.....
.....

PREFACE

Praise be to God Almighty because on this occasion I was able to complete this report. Completion of this report intended to fulfil the requirements for participating in an internship.

I also take this opportunity to express my gratitude to:

1. Zaldy Iskandar, B. Sc as director of Ottimmo International Culinary Artand Patisserie Academy.
2. Jessica Hartan, A.Md. Par. as advisor.
3. Heni Adhianata, S.TP., M.Sc. as head of Culinary art study program.
4. My parents who always support and help me in personally and providing moral & material support for me.
5. My friend who has supported the progress of thus report from Beginning to end.

That is all I can say, I apologize if there are errors or inconsistence in the use of words or sentences. Hopefully, the following report is helpful for the readers. Thank you.

Surabaya, October 2nd 2024



Renaldi Putra Sethio

ABSTRACT

This study explores the use of carob and beetroot as a syrup alternative for pregnant women and children, addressing concerns associated with traditional syrup products. Carob, derived from the *Ceratonia siliqua* tree, offers nutritional benefits such as vitamins, minerals, dietary fibre, folic acid which is really good for pregnant woman and polyphenols without caffeine or theobromine, making it safer for consumption by vulnerable groups. The objective of this research is to analyze the nutritional content of carob and beetroot and optimize the syrup production method to retain optimal nutrition. The research was conducted using sous-vide and steaming methods to preserve nutrients, followed by sensory tests by panelists to evaluate the texture, aroma, and taste of the syrup. The results show that carob and beetroot syrup has the potential to become a beneficial functional food ingredient, offering a healthy natural alternative to chemically synthesized syrups. With the nutritional benefits offered, this syrup can be consumed as a daily nutritional supplement for pregnant women and children, while also providing an alternative for consumers seeking healthy and natural products.

Keyword: *Beetroot, Carob, Children, Pregnant Women, Syrup.*

TABLE OF CONTENTS

Plagiarism Statement	i
Approval 1	ii
Approval 2	iii
Preface	iv
Abstract	v
Table Of Contents	vi
Table Of Figures	viii
List Of Tables	ix
Chapter I Introduction	1
1.1 Background Of The Study	1
1.2 The Objectives Of The Study	2
Chapter II Literature Review	4
2.1 Ingredients Review	4
2.1.1 Carob.....	4
2.2.2 Beetroot.....	6
2.2 Product Review.....	7
2.3 Process Review	8
2.3.1 Sous-Vide.....	8
2.3.2 Steaming.....	8
2.3.3 Infusion And Extraction.....	9
Chapter III Methods	10
3.1 Time And Place	10
3.2 Ingredients And Utensil.....	10
3.2.1 Ingredients.....	10
3.2.2 Utensils.....	11
3.3 Processing Methods	11
3.4 Flow Chart	12
Chapter IV Result And Discussion	13
4.1 Product Result.....	13
4.1.1 Texture	13
4.1.2 Aroma.....	14
4.1.3 Rasa.....	15

4.2 Nutrition Fact.....	16
4.2.1 Nutrition Table.....	16
4.2.2 Nutrition Calculation.....	19
4.2.3 Nutrition Label.....	20
4.3 Food Safety And Packaging	20
4.3.1 Processing And Storage Temperature.....	20
4.3.2 Shelf Life.....	20
4.3.3 Product Packaging.....	21
4.4 Financial Aspects.....	21
4.4.1 Product Cost.....	21
4.4.2 Selling Price	22
Chapter V Conclusion And Suggestion.....	24
5.1 Conclusion	24
5.2 Suggestion	24
Bibliography	
Appendix	

TABLE OF FIGURES

Figure 2.1 Carob Powder	5
Figure 2.2 Beetroot (<i>Beta vulgaris</i> L.)	6
Figure 3.1 Flowchart Beetroot	12
Figure 4.1 Carob and Beetroot Syrup.....	13
Figure 4.2 Nutrition Label.....	20
Figure 4.3 Design of Product Packaging.....	21

LIST OF TABLES

Table 3.1 Ingredients for carob and beetroot syrup.....	10
Table 3.2 Utensils for carob and beetroot syrup	11
Table 4.1 Texture Score	13
Table 4.2 Smell Score	14
Table 4.3 Taste Score	15
Table 4.4 Nutritional Value of Beetroot per 100g.....	16
Table 4.5 Nutritional Value of Carob per 100g.....	17
Table 4.6 Nutritional Value of Ingredients used in the Recipe of Carob and Beetroot syrup	19
Table 4.7 Cost of Ingredients	22
Table 4.8 Packaging Cost.....	22
Table 4.9 Total Cost.....	22