

SPINACH (*Spinacia oleracea L.*) AS A CO-SUBSTRATE FOR THE PRODUCTION OF TEMPEH

AZIZUL HAKIM BIN AHMAD

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Nurul Hidayah Binti Adenan
Supervisor
B. Sc. (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah Negeri Sembilan

Ilyanie Binti Haji Yaacob
Project Coordinator
B. Sc. (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah Negeri Sembilan
Sembilan

Dr. Nor’Aishah Binti Abu Shah
Head of Program
B. Sc. (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah Negeri

Date : _____

TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF FIGURES	vii
LIST OF TABLES	viii
LIST OF ABBREVIATIONS	ix
ABSTRACT	x
ABSTRAK	xi
CHAPTER 1 : INTRODUCTION	
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Significant of Study	4
1.4 Objective of the Study	5
CHAPTER 2 : LITERATURE REVIEW	
2.1 Tempeh	6
2.2 Starter culture for tempeh	7
2.2.1 <i>Rhizopus Oligosporous</i>	8
2.3 Substrate for the production of tempeh	
2.3.1 Soybeans	8
2.3.2 Spinach	9
2.4 Genetically Modified Organism	10
2.5 Nutrition Analysis	11
2.5.1 Protein	12
2.5.2 Carbohydrates	12
2.5.3 Fats	13
2.6 Sabouraud Dextrose Agar (SDA)	14

CHAPTER 3 : METHODOLOGY

3.1	Materials	15
	3.1.1 Soybeans	15
	3.1.2 Spinach	15
	3.1.3 Sabouraud Agar	15
3.2	Methods	16
	3.2.1 Preparing Tempeh Starter	16
	3.2.2 Microscopic Identification of <i>Rhizopus Oligosporous</i>	17
	3.2.3 Production of Tempeh using Soybeans as a substrate	18
	3.2.4 Production of Tempeh using Spinach as a co- substrate	18
	3.2.5 Physical Characteristics of Tempeh	19
	3.2.6 Nutritional Analysis	19
3.3	Statistical Analysis	23

CHAPTER 4 : RESULTS AND DISCUSSION

4.1	Microscopic Identification of <i>Rhizopus Oligosporous</i>	25
	4.1.1 Microscopic Observations	27
4.2	Physical Characteristics	28
	4.2.1 Result Discussion	31
4.3	Nutritional Analysis	32
	4.3.1 Moisture Content	33
	4.3.2 Ash Content	35
	4.3.3 Fats Content	37
	4.3.4 Protein Content	39
	4.3.5 Carbohydrates Content	41
	4.3.6 Result Discussion	43

ABSTRACT

SPINACH (*Spinacia oleracea* L.) AS A CO-SUBSTRATE FOR THE PRODUCTION OF TEMPEH

Spinach has been used as a co-substrate to soybeans to determine its ability in the production of tempeh by using the expected *Rhizopus Oligosporous* strain. *R. Oligosporous* was identified microscopically and common characteristics of the strain was well observed. The strain was cultured on SDA culture for 48 hours at 35°C. After the cultured is well grown, mycelia fully covered the petri dishes, spore suspension was made. The spore suspension act as a tempeh starter to produce the tempeh. After mixing the substrates with the spore suspension, soybeans took 48 hours at 35°C to fully ferment and produce tempeh while mix substrate took 24 hours at 37°C to fully ferment. All the tempeh produce has been observed by examining the color, surface coverage of mold mycelia, compactness, sliceability, and texture. Nutrition analysis showed the soybeans tempeh has higher protein, ash, and fats content while mix tempeh has higher moisture and carbohydrates. Thus, spinach can be used as a co- substrate in the production of high nutrition tempeh due to its higher carbohydrates content.