
CONTENTS

		<u>Page</u>
	ACKNOWLEDGEMENTS	i
	CONTENTS	ii
	ABSTRACT	v
	ABSTRAK	vii
	LIST OF FIGURES	ix
	LIST OF PLATES	xi
	LIST OF TABLES	xii
<hr/>		
CHAPTER 1	INTRODUCTION	1 - 1
<hr/>		
CHAPTER 2	LITERATURE REVIEW	2 - 1
<hr/>		
2.1	<i>Sargassum</i>	2 - 1
2.1.1	Tropical <i>Sargassum</i> species	2 - 1
2.1.2	Malaysian <i>Sargassum</i> species	2 - 8
2.1.3	Problems of classification	2 - 10
2.2	Conventional Classification of <i>Sargassum</i>	2 - 13
2.3	DNA extraction	2 - 15
2.4	DNA fingerprinting techniques	2 - 17
2.4.1	RFLP	2 - 17
2.4.2	RAPD	2 - 20
2.4.3	Molecular data / DNA sequence data	2 - 24
2.4.4	AFLP	2 - 33
<hr/>		
CHAPTER 3	OBJECTIVE	3 - 1

CHAPTER 4	MATERIALS AND METHODS	4 - 1
------------------	------------------------------	--------------

4.1	<i>Sargassum</i> species	4 - 1
4.1.1	<i>Sargassum oligocystum</i>	4 - 2
4.1.2	<i>Sargassum binderi</i>	4 - 8
4.2	Preparation of samples	4 - 15
4.3	DNA extraction	4 - 16
4.3.1	Protocol 1	4 - 16
4.3.2	Protocol 2	4 - 17
4.4	Gel electrophoresis	4 - 18
4.5	Spectrophotometry	4 - 18
4.6	Polymerase Chain Reaction (PCR)	4 - 19
4.6.1	Optimization of RAPD-PCR	4 - 19
4.6.2	Screening of primers	4 - 20
4.7	Data analysis	4 - 22
4.8	Clustering by the UPGMA method	4 - 23

CHAPTER 5	RESULTS & DISCUSSIONS	5 - 1
------------------	----------------------------------	--------------

5.1	DNA extraction	5 - 1
5.1.1	Quality comparisons	5 - 1
5.2.	Optimization of PCR	5 - 9
5.2.1	PCR parameters	5 - 9
5.2.2	Optimised conditions	5 - 9
5.3.	RAPD analysis	5 - 20
5.3.1	RAPD size	5 - 21
5.3.2	Selected region	5 - 21
5.3.3	RAPD profiles	5 - 28
5.3.4	Reproducibility	5 - 31
5.4.	Data analysis	5 - 33
5.4.1	Tables of F values	5 - 33
5.4.2	Comparison of F values	5 - 33
5.4.3	Phylogenetic analysis	5 - 53
5.4.3.1	OPA13	5 - 54
5.4.3.2	OPK7	5 - 57
5.4.3.3	OPK9	5 - 60
5.4.3.4	OPN6	5 - 63
5.4.3.5	OPN16	5 - 66
5.4.4	Probe for DNA fingerprinting	5 - 69
5.5	Molecular data versus morphology	5 - 71

CHAPTER 6	CONCLUSIONS	6 - 1
------------------	--------------------	--------------

6.1	Future work	6 - 4
------------	--------------------	--------------

REFERENCES