

**STUDY OF EXTRACTION AND STABILITY CONDITION FOR
ANTIOXIDANT PROPERTIES FROM KELAKAI (*Stenochlaena palustris*)
EXTRACT**

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

STUDY OF SUITABLE CONDITIONS IN THE EXTRACTION AND STABILITY TEST FOR ANTIOXIDANT ACTIVITY FROM KELAKAI (*Stenochlaena palustris*) PLANT

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The aims of this research are to discover the suitable conditions in the extraction and stability test for antioxidant activity from kelakai (*Stenochlaena palustris*) plant. The extraction process was done through two different solvents (ethanol & distilled water) and three extraction times (12, 24, 48 hours). It was found that samples which were extracted in distilled water for 48 hours had higher antioxidant activity, higher phenolic and flavonoids content. Next, the selected optimum extract was tested for its stability in different pH (4, 5, 6, 7), temperatures (5°C, 30°C, 50°C, 70°C, 90°C), and light conditions (bright and dark). From stability test with the effect of different pH, it was revealed that samples with addition of pH 4 and 5 had higher antioxidant activity. Likewise, samples with pH 5 were found to have higher phenolic and flavonoids content. As the effect of different temperatures, it was discovered that temperature of 70°C was suitable for antioxidant activity and flavonoids content of *Stenochlaena palustris* extract and 50°C was suitable for the phenolic content. All of the data within this research were obtained through analysis methods of DPPH scavenging activity, total phenolic content, and total flavonoids content assay. Some active components in optimum *Stenochlaena palustris* extract were also found through LC/MS analysis.

Keywords: *antioxidant activity, phenolic, flavonoids, stability, extraction, pH, temperatures*



DEDICATION

I dedicate this thesis to everyone who plays a role not only in my academic accomplishment but also in my life.



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TABLE OF CONTENTS

	Page
STATEMENT BY THE AUTHOR	2
ABSTRACT	3
DEDICATION	5
ACKNOWLEDGEMENTS	6
TABLE OF CONTENTS	7
LIST OF FIGURES	10
LIST OF TABLES	11
CHAPTER 1 – INTRODUCTION	12
1.1 Background.....	12
1.2 Research Problems	13
1.3 Research Objectives	14
1.4 Significance of Studies	14
1.5 Research Questions	14
1.6 Hypothesis	15
CHAPTER 2 – LITERATURE REVIEW	16
2.1 Kelakai (<i>Stenochlaena palustris</i>) Plant	16
2.2 Free radicals.....	18
2.3 Antioxidant	19
2.4 Polyphenols	20
2.5 Flavonoids	21
2.6 Extraction	21
2.6.1 Maceration.....	22
2.7 Stability of Antioxidant	22

2.7.1 pH	23
2.7.2 Temperatures	24
2.7.3 Light Conditions	26
2.8 Antioxidant Assays.....	26
2.8.1 Antioxidant Scavenging Assay (DDPH)	27
2.8.2 Total Phenolic Content	27
2.8.3 Total Flavonoids Content	28
2.8.4 Hydrogen Peroxide Scavenging Assay	29
2.8.5 Hydroxyl Radical Scavenging Activity	29
2.8.6 Ferric-Reducing-Antioxidant Power (FRAP) Assay	29
2.9 Analytical Instruments.....	30
2.9.1 UV-Visible Spectrophotometry	30
2.9.2 LC/MS (Liquid Chromatography Mass Spectrophotometry).....	31
CHAPTER 3 – RESEARCH METHODS	32
3.1 Venue and Time	32
3.2 Materials and Equipment.....	32
3.2.1 Chemicals and Materials	32
3.2.2 Equipment	32
3.2.3 Experimental Design	33
3.3 Experimental Procedure	35
3.3.1 Sample Preparation.....	35
3.3.2 Extraction Process	35
3.3.3 Stability Test.....	35
3.4 Antioxidant Assays.....	36
3.4.1 DPPH Scavenging Activity	36
3.4.2 Total Phenolic Content	36
3.4.3 Total Flavonoids Content	37
3.5 Statistical Analysis	38
3.6 Qualitative Analysis	38

3.6.1 LC/MS Analysis	38
CHAPTER 4 – RESULTS AND DISCUSSIONS	39
4.1 Determination of Suitable Extraction Condition	39
4.1.1 Correlation Between Antioxidant Activity, Phenolic and Flavonoids Content ..	43
4.2 Effect of Different pH during Stability Test.....	44
4.2.1 Antioxidant Activity	45
4.2.2 Total Phenolic Content	46
4.2.3 Total Flavonoids Content	48
4.3 Effect of Different Temperatures during Stability Test	49
4.4 Determination of Suitable Conditions for the Stability of Antioxidant Activity from <i>Stenochlaena palustris</i> Extract.....	53
4.5 Possible Active Compounds Identification in Optimum Extract of <i>Stenochlaena palustris</i>	54
CHAPTER 5 – CONCLUSIONS AND RECOMMENDATIONS	56
5.1 Conclusions	56
5.2 Recommendations	56
REFERENCES.....	57
APPENDICES	64
CURRICULUM VITAE.....	96