UNIVERSITI TEKNOLOGI MARA

SOLVENT EXTRACTION OF OIL FROM ARACHIS HYPOGAEA: THE EFFECT OF EXTRACTION TIME AND TYPE OF SOLVENT

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ABSTRACT

Vegetable oils are being used extensively due to their wide application mainly in food industry and can be derived from various seeds, nuts and fruits. *Arachis hypogaea* or better known as peanut or groundnut is popular as reliable oil source with wide applications and potential. In this study, the extraction of oil from peanut will be performed by using solvent extraction technique. Optimization of parameters which are the extraction time (hr) and the type of solvents were investigated by using one-factor-at-a-time (OFAT) method. Meanwhile, the temperature, solid-to-liquid ratio and particle size were kept constant at 60°C, 1:6 and 710 μm respectively. The optimum values obtained for extraction and type of solvent were found to be 4 hr and ethyl acetate respectively with oil recovery of 48.27 %.

TABLE OF CONTENTS

	PAGE
DECLARATION	ii
CERTIFICATION	iii
ACKNOWLEDGEMENT	V
ABSTRACT	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix

CHAPTER 1	INTRODUCTION	
	1.1 Background Study	1
	1.2 Objectives	2
	1.3 Problem Statement	3
	1.4 Research Scope	4
CHAPTER 2	LITERATURE REVIEW	
	2.1 Arachis hypogaea	5
	2.1.1 Botanical Description	5
	2.1.2 Geographic Distribution	9
	2.1.3 Potential Application	11
	2.2 Extraction Technique	12
	2.2.1 Mechanical Pressing	12
	2.2.2 Soxhlet Extraction	13
	2.2.3 Supercritical Fluid Extraction	14
	2.2.4 Microwave Assisted Extraction	15
	2.2.5 Ultrasonic Assisted Extraction	16
	2.2.6 Solvent Extraction	17

CHAPTER 1

INTRODUCTION

1.1 Background Study

Vegetable oils are oils that can be found in various seeds, nuts and fruits. Other than being extensively used in the food industry such as cooking oil, vegetable oil are also popular in the soap production, candles and perfumes (Koseoglu et al., 1998). Oil from different sources has different characteristics because of their respective composition which determines their usefulness in variable of applications (Adewuyi et al., 2010). Some research has been done to study the application of vegetable oil in phytocosmetology. From the research, grapes and argan oil triggered a decrease in the concentration of melanin which leads to the recommendation of such oils to be utilized in dermo-cosmetic products that aims to reduce skin pigmentation (Peev et al., 2013). Examples of vegetable oils include coconut oil, olive oil, corn oil, palm oil and peanut oil. An oilseed may be enclosed by a protective coating known as hull, husk or shell. These protective coatings are usually removed prior to processing the oilseed as it has very minimum utility (Ayoola et al., 2012).

Arachis hypogaea are often known as peanut, groundnut, or earthnut because the seed grow underground. It has been extensively grown as an annual