DETERMINATION ANTIOXIDANT (*ASCORBIC ACID*) IN DIFFERENT TYPE OF FRUITS

ROSMAWATI BT MD ZIN

Final Year Project Report Submitted in Partial Fulfilment of the Requirements for the Degree of Bachelor of Sciences (Hons.) Applied Chemistry In the Faculty of Applied Sciences Universiti Teknologi MARA

MAY 2009

This Final Year Project Report entitled " **Determination of antioxidant** (*ascorbic acid*) in **different type of fruits**" was submitted by Rosmawati Md Zin in partial fulfillment of the requirements for the Degree of Bachelor of Sciences(Hons.) Applied Chemistry in the Faculty of Applied Sciences , and was approved by

Prof Madya Dr Rusnah Samsuddin Supervisor B.Sc.(Hons.) Applied Chemistry Faculty of Applied Sciences Universiti Teknologi MARA 40450 Shah Alam Selangor

Cik Sabrina

Project Coordinator B.Sc.(Hons.) Applied Chemistry Faculty of Applied Sciences Universiti Teknologi MARA 40450 Shah Alam Selangor

Dr. Yusairie Mohd Head of Programme B.Sc.(Hons.) Applied Chemistry Faculty of Applied Sciences Universiti Teknologi MARA 40450 Shah Alam Selangor



ACKNOWLEDGMENTS

Firstly I would like to say thanks to everybody who get involved in this thesis research and 'Syukur Alhamdulillah', given and blessing from Allah because this report is completely finished even not so good and proper.

Thank you so much to my supervisor Prof Madya Dr Rusnah bt Samsuddin because without her, I could not finish this thesis very well and on time and from her support and opinion regarding information, knowledge, advise and idea for this thesis.

Furthermore, I would like to thank to all my friends and those who were given cooperation. For my classmate and individual person who gave an opinion and recommendation. I also feels much honored to say thank you to my parents who gave moral supports and inspirations.

Deeds and sacrifices from everyone that involve in this thesis report would never I forget. Thank you very much.

ROSMAWATI MD ZIN

TABLE OF CONTENTS

ACKNOWLEDGEMENT

ž.

Page

iii

TABLE OF CONTENTS LIST OF TABLES				
				LIST
LIST	viii			
СПА	PTER	1 INTRODUCTION		
			1	
1.1		ground	1	
1.2	Objec	tives of study	2	
СНА	PTER	2 LITERATURE REVIEW		
2.1	Antioxidant			
	2.1.1	Ascorbic acid	5	
	2.1.2	Glutatnione	6	
	2.1.3	Melatonin	7	
	2.1.4	Vitamin E	7	
2.2	Pro-O	Oxidant activities		
2.3	Oxida	ative stress in disease 9		
2.4	Health effect			
	2.4.1	Disease treatment	10	
	2.4.2	Disease prevention	11	
2.5	Physical Exercise			
	2.5.1	Adverse effect	15	
2.6	Uses i	in Technology	19	

CHAPTER 1

INTRODUCTION

1.1 Background

Eat fruit as a good natural source of anti-oxidants which help to prevent the dangers of free .Antioxidants protected cells from the damage caused by highly reactive molecules known as free radicals which have been linked to health problems including cancer, Alzheimer's, and cardiovascular diseases. Antioxidants reacted with and effectively neutralize these free radicals as far as their damaging health impacts are concerned. Although free radicals were part of the natural cell metabolic processes, the body does not 100% effectively remove them particularly as one gets older. Eating antioxidants like the fruit antioxidants helps the body make up the difference.

Just as for other fruit nutrition factors, it was far better to eat natural food sources of nutrients (including the fruit antioxidants) rather than food supplements and pills. The number, quantity, and variety of antioxidants in real foods like dragon fruit was completely unmatched by any food supplement or pills - even those claiming to have 'antioxidant' health benefits. Nothing compared to the rich array of nutrients and antioxidants in a real natural food like the fruit.

Even though a supplement claiming to offer a high amount of antioxidant benefits may sound good, the fact was that foods like dragon fruit have literally thousands