

**COMPARISON STUDY OF ANTIOXIDANT IN COMMERCIAL
JUICE DRINKS USING DDPH SCAVENGING ACTIVITY AND
TOTAL PHENOLIC COMPOUND (TPC).**

HASRULNIZAM BIN ABD HAMID

**BACHELOR OF SCIENCE (Hons.) APPLIED CHEMISTRY
FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA**

MAY 2009

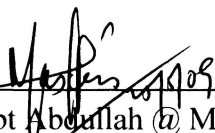
**COMPARISON STUDY OF ANTIOXIDANT IN COMMERCIAL
JUICE DRINKS USING DDPH SCAVENGING ACTIVITY AND
TOTAL PHENOLIC COMPOUND (TPC).**

HASRULNIZAM BIN ABD HAMID

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

May 2009

This Final Year Project Report entitled “Comparison Study of Antioxidant in Commercial Juice Drinks Using DDPH Scavenging Activity and Total Phenolic Compound (TPC)” was submitted by Hasrulnizam Bib Abd Hamid, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry, in the Faculty of Applied Science, and was approved by



Pn.Hjh. Mashita bt Abdullah @ Mohd Noor

Supervisor

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



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



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

Date: 25 MAY 2009

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENT	i
TABLES OF CONTENTS	ii
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF ABBREVIATIONS	vii
ABSTRACT	viii
ABSTRAK	ix

CHAPTER 1 INTRODUCTION

1.1	Background	1
1.2	Problem statement	3
1.3	Significance of study	3
1.4	Objectives	4

CHAPTER 2 LITERATURE REVIEW

2.1	Antioxidant	5
	2.2.1 Natural antioxidants	6
2.2.2	Synthetic antioxidants	8
2.2	Commercial health drinks	8
	2.2.1 Mona vie juice	9
	2.2.2 Roselle juice	10
	2.2.3 Magno juice	10
2.3	Method of determine antioxidant in commercial health drinks	11
	2.3.1 ORAC assay	12
	2.3.2 DDPH assay	13
	2.3.3 ABTS assay	14

ABSTRACT

COMPARISON STUDY OF ANTIOXIDANT IN COMMERCIAL JUICE DRINKS USING DDPH SCAVENGING ACTIVITY AND TOTAL PHENOLIC COMPOUND (TPC).

The study of the present project was to determine and compare the antioxidant activity in commercial juice drinks using DDPH scavenging activity and Total Phenolic Compound (TPC). Samples analysed were from the same brand (Marigold product) namely: orange juice, guava juice, apple juice and mango juice. The order of effectiveness of fruit juices in inhibiting free radicals was as follow: apple juice, (92.81%) > orange juice, (84.85%) > guava juice, (79.02%) > mango juice, (65.48%). The values of total phenolic compounds in the juice were as follows: mango juice, (578.1 mg GAE/L) > orange juice, (381.8 mg GAE/L) > guava juice, (230.8 mg GAE/L) > apple juice, (228.5 mg GAE/L).