

**DETERMINATION OF TOTAL PHENOLIC CONTENT IN
DIFFERENT VARIETIES OF DATE**

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

NOVEMBER 2009

ACKNOWLEDGEMENT

Upon completion of this project, I would like to express my gratitude to many parties that involved. My heartfelt thank goes to my supervisor, Hajjah Mashita Abdullah@Mohamad Nor for her spending time, advice, and guidance throughout the work involved in completing this subject. I would also like to thank to my second examiner, Hajjah Mashiah Domat Shahrudin for spending time marking and correcting my final report project as well her critics and suggestions to complete this report. Thanks also to all laboratory staff for helping me throughout the preparation of the project and friends who had helped me directly or indirectly during this project work. My special thanks to my parents, brothers, sisters for their understanding, encouragement, moral and financial support.

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ABSTRACT

DETERMINATION OF TOTAL PHENOLIC CONTENT IN DIFFERENT VARIETIES OF DATE (*Phoenix Dactylifera L.*)

Date is well known among the Malaysian even though its origin is from the Middle Eastern countries. It is rich in simple sugars such as glucose and fructose (65 -80%), and a good source of fibers and some essential minerals, but low in fat and protein with no starch. The purpose of this study is to determine the total phenolic content present in different varieties of date by using Folin-Ciocalteu's method based on the standard calibration curve of gallic acid measured at 650 nm using UV-Visible spectrophotometer (Perkin Elmer). The amount of total phenolic content obtained were, 1089.60 ± 50.99 GAE/g initial weight for Mariami, 679.21 ± 47.19 GAE/g initial weight for Rotab, 525.91 ± 83.58 GAE/g initial weight for Qitarah, 328.55 ± 74.63 GAE/g initial weight for Ajwa and 307.10 ± 97.30 GAE/g initial weight for Tunisia. Mariami date was observed to have a higher total phenolic content compared to other dates analysed in this study. In conclusion, the highest total phenolic content was found in Mariami date and there were no significant relations between costs of each date with total phenolic content present there in.

CHAPTER 1

INTRODUCTION

1.1 Background and Problem Statement

For centuries, the date (*Phoenix dactylifera L.*) has been an important crop in the desert regions of Middle Eastern countries, and has formed the basis of survival for many ancient nomads. Date fruits are rich in phenolic compounds possessing antioxidant activity. Structurally, phenolic compound comprises of an aromatic ring, consists one or more hydroxyl constituents and range from simple phenolic molecules to highly polymerised compounds. Most naturally occurring phenolic compounds are present as conjugates with mono and polysaccharides, link to one or more of the phenolic groups and may also occur as functional derivatives such as esters and methyl esters.

Phenolic compounds can basically be categorised into several classes. Of these, phenolic acids, flavonoids and tannins are classified as main dietary phenolic compounds (Aberoumand and Deokule., 2008). Although phenolic compounds do not have any known nutritional functions, it maybe considered crucial to human health because of their antioxidant potency (Karakaya *et al.*, 2001). Recently, Mansouri *et al.*, (2005) studied phenolic profiles of seven different types of ripe dates grown in Algeria and founded that all varieties