

**ANTIOXIDANT ACTIVITIES AND TOTAL PHENOLIC CONTENT
OF THE AQUEOUS AND METHANOL EXTRACTS OF
MANGO SEEDS (*MANGIFERA INDICA*)**

NOR AZZUA BINTI ISZHAM

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ABSTRACT

This study was carried out to calculate the antioxidant activity and to verify the total phenolic content of mango seeds. Methanol and water were used as solvent to extract the seeds' chemical compound. Ferric thiocyanate, thiobarbituric acid and 1,1-diphenyl-2-picrylhydrazyl tests were done to measure the antioxidant activity and the phenolic contents of the sample was measured by using the total phenolic content test. The total phenolic content were plotted against the standard calibration curve of Gallic acid and the value shows that methanol extract (83,434 mg/g) contain higher phenolic content as compared to water extract (83,122 mg/g). Methanol extract also showed high scavenging activity at 96.21% and water extract only at 90.24% in the 1,1-diphenyl-2-picrylhydrazyl test. As for thiobarbituric acid and ferric thiocyanate tests, the results showed that the antioxidant activity of mango seeds is greater in thiobarbituric acid test, methanol extract at 95% and water extract at 94%, compared to in ferric thiocyanate test, methanol extract at 1.3% and water extract at 40.44%, which indicated that both water and methanol extract of crude compound has a larger number of peroxide in the secondary stage of lipid peroxidation than in the initial stage. For both methods showed that water extract has a greater antioxidant activity compared to methanol extract.

CHAPTER 1

INTRODUCTION

1.1 Natural Product

Natural product is a chemical compound or substance made or formed by living organisms that are found in nature. It can be extracted from tissues of terrestrial plants, marine organisms or microorganism fermentation broths. It is believed that plants are rich with lead compounds such as morphine, cocaine, digitalis and etc.

These lead compounds are useful drugs and have been the basis for synthetic drug for centuries. As an example, local anaesthetics were developed from cocaine. In addition, some of the drugs are used clinically in which the active compound was isolated from the plant themselves. This includes the anticancer agent paclitaxel (Taxol) which is extracted from the yew tree and the antimalarial agent artemisinin from *Artemisia annua*.

The compounds of natural product are useful in curing illness. Mankind had been using plants to heal wound and cure diseases for centuries. The scientists who had done research on the plants, discovered that some of the chemical compounds