DETERMINATION OF TOTAL PHENOLIC CONTENT AND ANTIOXIDANT ACTIVITY IN PINEAPPLE FRUIT (*ANANAS COMOSUS*)

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TABLE OF CONTENTS

ABSTRACT

DETERMINATION OF TOTAL PHENOLIC CONTENT AND ANTIOXIDANT ACTIVITY IN PINEAPPLE FRUIT (*ANANAS COMOSUS*)

This study was conducted to evaluate and compare the total phenolic content and antioxidant activity of selected local pineapple fruit (*Ananas Comosus*). Three types of local pineapple cultivar (Josapine, Morris and N36) were analyzed for total phenolic content (TPC) and DPPH (1,1-Diphenyl-2-picrylhydrazyl) radical scavenging activities. The total phenolic content was measured by Folin-Ciocalteu's reagent while the antioxidant activity was estimated by using DPPH. It was found that Josapine contain the highest total phenolic content and the highest percentage free radical scavenging followed by Morris and N36. The total phenolic content for Josapine, Morris and N36 are 28.84±0.23 mg GAE/100g, 26.38±0.59 GAE/100g and 25.51±0.30 GAE/100g respectively. The three varieties of pineapple showed weak radical scavenging activity compared to Vitamin C. This study shows that for all three varieties of pineapple have weak antioxidant activities.

CHAPTER 1

INTRODUCTION

1.1 Background and problem statement

Nowadays, the incident that associated with the degenerative human diseases such cancer, cardio- and cerebro-vascular diseases, heart disease inflammation, arthritis, immune system decline, brain dysfunction and cataracts has increased drastically. From the statistic of the Malaysian Burden of Disease and Injury Study, it shows that the top two leading causes of deaths in the year 2000 are heart disease and cerebrovascular disease. The total death for the Malaysian population in 2001 was 1.7 million with almost two-thirds of this deaths resulted from chronic diseases (Ames, 1983; Ramli and Taher, 2008).

The degenerative human diseases have been recognized as a possible consequence of free radical damage to lipids, proteins, and nucleic acids. Studies have found that free radical has the potential to damage the molecules by reactive oxygen species (ROS) and it is also involved in initiation phase of some degenerative illnesses. The examples of free radical species are