DETERMINATION OF ANTIOXIDANT IN 3 IN 1 INSTANT COFFEES IN MALAYSIA MARKET BY USING FERRIC REDUCING ANTIOXIDANT POWER (FRAP) ASSAY

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ABSTRACT

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Coffee beverage is one of the most beverages that are consumed by the people around the world. It is rich with the antioxidant compounds which will help to protect human body against from the effect of dangerous free radicals. In this study, seven different brands of 3 in 1 instant coffee were purchased from the local market to determine the antioxidant content. Ferric Reducing Antioxidant Power (FRAP) assay was used to determine the antioxidant capacity in coffee samples and analyzed by using UV-Vis spectrophotometer at 536 nm. The samples were extracted by using water as a solvent which followed the daily dietary method used by the consumer. Brand that exhibit the highest antioxidant content was brand SS with the FRAP value 285.94 μM Fe [II]/mL coffee. Brand IC had the lowest antioxidant content with the FRAP value 182.87 μM Fe (II)/mL coffee. Therefore, consumers have reliable information to choose the best brand of 3 in 1 instant coffee for the daily intake.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Coffee is a drink made from roasted coffee beans which are the seeds of berries from the coffee plants. *Coffee arabica* and *Coffee canephora* are the most popular species among the coffee plants (Parras *et al.*, 2007). *Coffee arabica* and *Coffee canephora* are from Ethiopia and tropical Africa (Martini *et al.*, 2016). *Coffee liberica*, *Coffee stepophylla*, *Coffee mauritiana* and *Coffee racemosa* are another species that have lower popularity. Nowadays, coffee is one of the beverages that have greater popularity around the world. Almost every morning, people usually will consume coffee as for their breakfast. Because of the higher content of caffeine, it becomes one of the popular beverages among the adults (Niseteo *et al.*, 2012).

Their pleasant flavor and aroma from roasted coffee beans are another reason why coffee becomes famous from the past. *Coffee arabica* has higher quality than *Coffee canephora* (Parras *et al.*, 2007) but in the instant coffee industry, *Coffee canephora* is more favorable than *Coffee arabica* because it gives