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THE COMPARISON OF ANTIOXIDANT AND BIOACTIVE COMPOUND IN FRESH PINEAPPLE AND PINEAPPLE POWDER

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ABSTRACT

The aims of this study were to determined the antioxidant and bioactive compound of fresh pineapple between pineapple powder and to evaluate the antioxidant and bioactive compound of fresh pineapple. Ascorbic acid, total phenolic compound, total flavonoid and 2,2-diphenyl-1-picrylhydrazil (DPPH Assay) were analyzed using morris pineapple flesh. The ascorbic acids, total phenolic compound and total flavonoid in the Morris pineapple flesh is higher rather than pineapple powder. The proximate and physiochemical properties showed good quality and increased solubility of pineapple powder compared to the fresh pineapple. Antioxidant have possibility to reduce the oxidative damage that caused by the free radical and chelating metals. It can be found in the fruit that is phytochemicals, vitamins and enzymes. However, the antioxidant capacities of the Morris pineapple is higher from the other type of pineapple likes Sarawak and Josaphine. It contains 65mg/mL in Morris pineapple flesh compare with the pineapple powder that is 53mg/mL at 100% methanolic solution. Overall the spray dried of pineapple may be a good source of natural antioxidants and profoundly increase the uses of pineapple fruits in value added processing and dietary intake.

***Keywords*:** Antioxidant activity, ascorbic acid, Morris pineapple, total flavonoid, totals phenolic.

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Pineapples were first recorded by Europeans in 1493 on the Caribbean Island. It is known botanically as Ananas Comosus. Pineapples have a wide cylindrical shape, yellow skin and a regal crown of spiny, and green leaves. The fibrous flesh of pineapple is yellow in color and has a vibrant tropical flavor that balances the tastes of sweet and tart. The fruit has more sugar content and a sweeter taste. But, the fresh fruit can not be stored for long period because it will be bruises and darkened. One of the method to prevent from it happening, the spray drying is the best technique to apply of the pineapple so that the moisture content can be decreased.

From the research, the fresh pineapple contains 81.2 to 86.2% moisture, and 13-19% total solids, sucrose, glucose and fructose which are the main components of the nutrition part (F. Hossain, Akhtar, & Anwar, 2015). The pineapple powder from the spray dryer have less the moisture content and nutrition. Therefore, to preserve