UNIVERSITI TEKNOLOGI MARA

THE EFFECT OF MOISTURE CONTENT IN THE PRODUCTION OF AGARWOOD TEA

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ABSTRACT

Tea is a beverage that consume by people the most, aside water. Agarwood tea has so many benefits such as the antioxidant activities, anti-hypertensive and anti-inflammatory. A few benefits have been proven by a study on the Agarwood tea. The process of making Agarwood tea is the same as the process of making green tea from the leaves of *Camellia sinensis*. In this study, the equipment used for the drying process was Vacuum Far-Infrared Radiation (VFIR) dryer and the leaves used were Aquilaria Subintegra species. Based on the previous research, the optimum parameters of the VFIR dyer were set at 50˚C and 0.6 bar for 120 minutes for drying to study the chemical constituents in the Agarwood leaves. However, since previous study just used constant drying period, thus in this research, the first experiment conducted used the same parameters but only varying the time in order to find the optimum drying period. As for the result, 120 minutes is the suitable drying period after studying the moisture content removal analysis, colony count analysis and antioxidant activity. Another experiment conducted to study on the how moisture content of different storage conditions affects the lifespan of Agarwood tea. The two storage conditions used were the kitchen and air-conditioning room. The results of the samples were obtained every 7 days which repeated for 28 days by studying the moisture content removal analysis, colony count analysis and antioxidant activity. For the moisture content removal analysis, the results show constant trend for 28 days which is below 10%. As for the colony count analysis, 1 colony observed up until 14 days but there is no colony after 21 days onwards. Besides, the antioxidant activity analysis is quite good and maintained for 28 days means the chemical constituents in tea were preserved well. Lastly, it shows that the Agarwood tea stored in the air-conditioning room was actually increase its lifespan as long the tea was kept in a sealed packaging.

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CHAPTER ONE

INTRODUCTION

1.1 Research Background

Tea is one of the drinks or beverages that people like to consume especially in some of the Asian countries (Dalong Zhu, 2013). In this world, after the normal drinking water, tea is the second most consumed drink among the people nowadays (Adam, 2017). People tend to choose tea as one of the favorite drinks because the aroma and the taste of the tea really give high satisfaction. Tea is also famous because it contains a lot of antioxidants. As stated by (Chung S. Yang, 2000), tea contains polyphenol that recognized with its antioxidant activities since it has the ability to scavenge the reactive oxygen.

There are many types of tea that have been commercialized in the market such as green tea, black tea, and Oolong tea. Black tea, Oolong tea and green tea come from the same leaves of *Camellia Sinensis* but undergo different level of fermentation (Dalong Zhu, 2013). Green tea does not undergo fermentation process while black tea and Oolong tea undergo the fermentation process. The difference between Oolong tea and black tea is Oolong tea is partially fermented while black tea is fully fermented (Figueira, 2019).

Generally, tea gives high benefits towards human's health especially the green tea such as cancer prevention, anti-inflammatory and anti-oxidative (Chacko, 2010). Instead there are people already did some research on the Agarwood tea to prove the benefits of the Agarwood tea such as (Adam, 2017). Many research has been done but there is no research stated the suitable amount of moisture content needed in Agarwood tea to provide a quality Agarwood tea and long lifespan. Besides, there is no scientific study on the effect of moisture content towards the Agarwood tea production neither on the chemical constituents nor the lifespan.

The leaves of *Aquilaria* contain many types of chemical constituents that may give benefits related to pharmacological properties such as flavonoids, fatty acids and amino acids. Flavonoids from Agarwood tea provide strong antioxidant activities while hypoglycemic effect can be possessed from the ethanolic extract. But the evidence of