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METHODS OF PROCESSING GAHARU GREEN, YELLOW AND BLACK TEA

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ABSTRACT

In Malaysia, Aquilaria tea is also known as Gaharu tea. Due to long period of time for a single gaharu tree to induction and growth, farmers wanted to sustain their living by seeking into opportunities such as processing tea derived from the abundant gaharu leaves in the plantation. However, there is no formal method in processing gaharu tea in the market. Currently, there are three type of tea that can be produced through different processing method mainly by varying the degree of fermentation of each method which result in green tea, yellow tea and black tea. The aim of this research is to process gaharu leaves into gaharu green, yellow and black tea and to study the content from each tea which is antioxidant and caffeine. Fermentation is said to have effect on the caffeine and antioxidant on plant-based food. Thus, analysis of caffeine on each gaharu tea was done by using elemental analyzer to study the composition of nitrogen since caffeine is mainly composed of nitrogen atoms. Based on the result obtained, the nitrogen composition is the highest in black gaharu tea compared to gaharu yellow and green tea indicating highest caffeine. Compared to market tea derived from leaves of Camillia sinensis, caffeine content in gaharu tea is lower. Furthermore, the analysis of antioxidant was done using DPPH assay method. The result showed that antioxidant content is higher in fermented black and yellow gaharu tea compared to green gaharu tea. When comparing to standard commercial BOH green and black tea BOH, gaharu tea has lower antioxidant content. Fermentation is said to increased antioxidant activity by releasing greater amount of flavonoid contained in the leaves.

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CHAPTER ONE

INTRODUCTION

1.1 Background Study

The production of tea starts from young leaf bud of Camellia sinensis type species where the plant belongs to the family of Theaceae. China the origin of tea now is widely cultivated in other countries due to the local surrounding environment which is favourable for the growth of the tea plant. Nowadays there are many type of tea such as green tea, yellow tea and black tea, the most common is green tea. Bioactive compounds in every type of teas are different from each other where each type of the compound has specific health benefits to the consumers. The difference of the emergence of these various types of tea is due to slightly different processing step that are used. Tea can be classified into three categories, nonfermented tea, semifermented tea and fully fermented tea.

Green tea is in nonfermented category follow by yellow tea (semifermented tea) and black tea (fully fermented tea). Right after plucking of tea leaves, the leaves are immediately pan fried or steamed thus the action of enzyme are not initiated for the green tea. Furthermore, lightly fermented yellow tea is similar in many ways with green tea. Production of yellow tea has an adjustment in order to reduce the oxidation level while preserving its health benefits. Moreover, black tea a full fermented tea. The characteristic of black tea such as flavour, taste and color is due to theaflavins (TF) and thearubigins (TR) formed during fermentation process. Apart from that, there are also new type of tea called crush, tear and curl tea (CTC) and orthodox tea mainly produced in India. It is said that CTC tea is much more popular compared to green tea. Process of CTC tea involved additional steps such as aeration, withering leaves for specific period of time normally hours which oxidises the flavonoids and also darkening the color of the leaves. Orthodox tea is also popular and widely consumed as CTC tea. The different is that orthodox tea are rolled with machines in a manner mimics the hand rolling action.