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CHEMICAL AND PHYSICAL CHARACTERIZATION OF BAMBOO TEA LEAVES

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Structured Abstract

Background: The leaves of the bamboo plant contain a variety of chemicals, including antioxidants, polyphenols, flavonoids, minerals, and vitamins. These elements support the potential health benefits of bamboo leaf tea and have indirectly contributed to its popularity. The objective of this study was to determine the physical and chemical properties of bamboo leaf. This is because the problem of unknown level of TPC of bamboo leaves needs to be solved. Thus, the abundance of bamboo leaves can be utilized by producing tea from it to overcome the problem of abundance and unuse of the leaves in industry.

Methods: The freshly picked bamboo leaf was subjected to high-temperature steam at 100°C for a brief length of time. The following step is to cut the leaf sample. The tea leaves are then dried to ensure stability and a long shelf life. For drying, a 35 °C oven used with a timer set for roughly 40 minutes. The sample of bamboo leaf was grinding and examined by UV-Vis, ICP-OES, SEM, and XRD.

Results: Different size of sample has been used as the parameter in this study. The value of TPC also known as antioxidant obtained in 1 gram sample immersed in 800 ml water was 2.275 µg/ml and 0.975 µg/ml in fine and coarse sample respectively. This result has been statistically proven which the value of $P < 0.05$. This study also revealed the different concentration heavy of metal contained in the bamboo leaf sample and they are Ca, Cu, Fe, K, Mg, Mn, Na, Pb, and Zn. From the XRD result, it can be concluded that the sample was naturally amorphous. This result was confirmed with the observation of the sample using SEM.

Conclusion: In conclusion, the findings of this study indicated that the value of TPC or antioxidant in bamboo leaf tea is significant to produce tea from it. Smaller particle size could give higher TPC value. Thus, it could give huge benefits to the consumer, and it can also solve the problem occur.

Keywords: Tea, Bamboo leaf tea, TPC, Bamboo leaf

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