

## ABSTRACT

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### **STUDY OF ANTIOXIDANT CHARACTERISTICS OF SEVERAL TYPES OF TEA BEVERAGES PREPARED FROM AFRICAN BITTER LEAVES (*VERNONIA AMYGDALINA* DEL.)**

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African bitter leaves (*Vernonia amygdalina* Del.) have been known for its beneficial effects in human health including treating various illness such as diabetes, malaria and cancer. Tea is a beverage with pleasant aroma which is known for its polyphenolic compounds which contribute to the antioxidant activity. The aim of this study is to determine the effect of processing methods on antioxidant characteristics of tea beverages prepared with African bitter leaves and to determine effect of temperature and time of steeping on antioxidant characteristic of steeped African bitter leaf tea beverages. African bitter leaves were processed into different types of tea which are green tea, oolong tea and black tea. Each types of tea were steeped into different time and temperature of steeping and analyzed for its total phenolic content, total flavonoid content, antioxidant activity and sensory analysis (color, aroma, taste, aftertaste, overall). The result shows that different processing methods and temperature and time of steeping affect the antioxidant activity of tea beverages prepared from African bitter leaves. The optimum steeping time for African bitter leaf “green tea”, African bitter leaf “oolong tea”, African bitter leaf “black tea” toward antioxidant activity is 90°C and 7 min. Based on consumer acceptance, the addition of sugar to tea beverages prepared from African bitter leaves resulted into higher overall acceptance rather than without the addition of sugar. Result also shown, shorter time of steeping increases the overall acceptance of tea beverages prepared with African bitter leaves. However, the addition of sugar to tea beverages prepared from African bitter leaves did not increase the antioxidant activity, but a significant decreased is shown in the research.

Keywords: total phenolic content, total flavonoid content, antioxidant, African bitter leaves, tea beverages, green tea, oolong tea, black tea

References: 40 (2000-2017)