# ABSTRACT

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**"STUDY OF PHYSICOCHEMICAL AND ANTIOXIDANT CHARACTERISTICS OF PROBIOTICS FERMENTED DRINK MIXED WITH AFRICAN BITTER LEAF (*VERNONIA AMYGDALINA* DEL.) CRUDE EXTRACT"**

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African bitter leaf (*Vernonia amygdalina* Del.) has been known and claimed to have high antioxidant, phenolic and flavonoid content. Probiotic-fermented drink is known as a good for health and rising consumption nowadays. The objective of the research was to study the physicochemical and antioxidant characteristics of African bitter leaf probiotic fermented drink. The results show that addition of African bitter leaf has significantly ($p \leq 0.05$) increased the antioxidant activity, total phenolic and total flavonoid content from control (without addition of African bitter leaf crude extract). The treatments are 5 and 7.5% skim milk; 0, 1, 2 and 3% African bitter leaf crude extract; and 18, 20 and 22h fermentation time. The best concentration of African bitter leaf extract to the probiotic fermented drink is 3%. It gives the highest antioxidant activity with 5% skim milk and 22 h fermentation displayed the lowest $IC_{50}$ of 6397.983±176.164 ppm; where as the highest of total phenolic content with 7.5% skim milk in 20 and 22 h fermentation time of value of 19282.667±47.324 mg GAE/g sample; where as 7.5% and 22 h the highest of total flavonoid content of value 37030.000±433.734 mg QE/g sample. Proximate, sensory and resistance of acid analyses have been conducted to the highest antioxidant activity of African bitter leaf probiotic fermented drinks. From consumer acceptance, the probiotic-fermented drink with 5% skim milk with 3% crude extract and 22 h fermentation time has the highest overall acceptance.

Keywords : African bitter leaf, antioxidant characteristics, crude extract, flavonoid, probiotic fermented drink, phenolic

References : 68 (1995–2017)