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Flavonoid, Phenolic, and Antioxidant Activity Test of Senna (*Senna alexandrina* Mill.) Leaf Extracts

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ABSTRACT

Senna leaf plant (*Senna alexandrina* Mill.) is empirically effective in treating several diseases. Senna leaves contain saponins, alkaloids, glycosides, flavonoids, phenols, sesquiterpenes, tannins, and phytosterols. This study aims to assess Senna leaf extract's antioxidant activity, flavonoid, and phenolic content (*Senna alexandrina* Mill.) with various extraction methods and solvent variations. Senna (*Senna alexandrina* Mill.) leaves were extracted using Ethanol 96%, methanol, and ethyl acetate by maceration and ultrasonic methods. The extracts obtained were then tested for antioxidant activity and to determine the phenolic and flavonoid content using UV-Vis spectrophotometry. The highest total phenolic content obtained from maceration and ultrasonic extraction methods were ethanol extracts, with 12.96 and 14.08%. The highest total flavonoid content obtained from maceration and ultrasonic extraction methods was from ethyl acetate extract, with the same level of 7.4%. While antioxidant activity was obtained, the best results were also obtained in ethyl acetate extract with IC50 161.2 μg/mL from the maceration method and 119.9 μg/mL from the ultrasonic method. The research showed that the highest antioxidant activity was obtained in ethyl acetate extract from maceration and ultrasonic extraction methods. The highest phenolic content was obtained in ethanol extract of senna leaves by maceration and ultrasonic methods. The highest flavonoid content was obtained in ethyl acetate extract using maceration and ultrasonic methods.

Keywords: Senna leaf (*Senna alexandrina*), maceration, ultrasonic.