

ABSTRACT

Antioxidant Activity Assay of Green Tea (*Camellia sinensis*) and Roselle (*Hibiscus sabdariffa*) Combination Using UV-Vis Spectrophotometry with DPPH Reagent *Literature Review*

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Green tea (*Camellia sinensis*) and roselle (*Hibiscus sabdariffa*) are known as sources of natural antioxidant. The leaves of *Camellia sinensis* contain high amount of polyphenols, which protect organisms from damage caused by free radicals, whilst roselle rich in bioactive compounds such as anthocyanins and other flavonoids. This literature review aims to identify the effect of green tea and roselle combination on their antioxidant activity. This review is a non-systematic review in the form of scoping review. The database sources used in this review are scopus and science direct, where the selected articles published in the time span between 2010–2020.

The results of this review showed that green tea leaves contain a varying number of polyphenols, caffeine and flavonoids, whilst roselle contains a varying number of some bioactive compounds such as flavonoids, organic acids, sugars, phenolic acids, fatty acids and small amount of carotenoids. Green tea and roselle also have total polyphenol content and total flavonoid content, while roselle is proven to have total anthocyanin content. This literature review showed that both green tea and roselle have an ability to reduce the stable DPPH radical compound, which confirmed their antioxidant activity. It was also shown in this literature review that the combination have a synergistic effect, resulting an increase in the trolox equivalent value compared to the trolox equivalent value in green tea and roselle.

Keyword: green tea, roselle, antioxidant activity, combination, synergistic effect