



Antioxidant Compounds and Functional Properties of Edible Flowers

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ABSTRACT

Edible flowers have been widely consumed for ages until now. The attractive colors and shapes, exotic aroma, and delightful taste make edible flowers very easy to attain favored. A wide variety of products, both food and non-food, can be produced from edible flowers. Nowadays, the use of edible flowers for food and beverages appears to be demanding as the population requires a healthy diet to endorse their immunity for a global pandemic. Edible flowers have become an excellent natural food source due to the unique composition and concentration of antioxidant compounds in the matrices. Those antioxidant compounds are phenolic acids and flavonoids. The group of phenolic acids are chlorogenic acid, gallic acid, p-hydroxybenzoic acid, and p-coumaric acid. While the flavonoid group are flavones, flavonols, flavanones, and anthocyanins. These antioxidant compounds are known to have biological properties. Therefore, this review was written to summarize the functional properties contained in edible flowers, so that they can help researchers and food producers.

Prior to preparing this review, information related to both ornamental and fruit flowers from subtropical and tropical regions was collected and filtered to select the most appropriate edible flowers to discuss. Subsequently, a literature study related to the chemical composition and functional properties of edible flower were carried out through several databases such as Scopus, Google Scholar, ScienceDirect, and ResearchGate. The data sources were documents published from 2010 to 2020. The exclusion criteria have been defined, such as the samples used to examine the functional properties of edible flowers were obtained from flower's essential oil or flower extracts containing a mixture of flowers (blossoms) with their leaves or stems.

Based on the results, edible flowers with a varied composition of phenolic compounds have been proven as having antimicrobial, anticancer, and anti-inflammatory effects. In addition, phenolic compounds were associated with enzyme inhibitory activity, which become potential as an effective hypoglycemic and uricosuric agent. Moreover, phenolic compounds with intense antioxidant activity showed neuroprotective effects. Knowing the antioxidant compounds and their functional properties from edible flowers are necessary to diversify the usage and reach a broader consumer. Therefore, this reported review could be useful for functional product development, engaging the discussed edible flowers.

Keywords : Edible flower, bioactive compounds, phenolics, functional properties, functional food.