

Comparative Study Of The Antioxidant Activities Of *Rosa Indica* Petal Extract And The Analytical Grade Rose Essential Oil (REO)

Abstract

Rose (*Rosa indica*) is one of the most important species of Rosaceae family flowers and is one of the flowers that are much in demand by the community because besides being an ornamental flower it can also be used as a cosmetic base material. Rose also contains a variety of substances that are treated as antioxidants, and free radical scavenging. The antioxidant activity test in this study used the parameters of diphenyl picrylhydrazine (DPPH) trapping activity and tyrosinase enzyme inhibition. Rose petals and base of rose contain flavonoids, phenols, tannins, triterpenoids, and alkaloids. At the same concentration of sample between the petals and the essential oil of the rose produces different DPPH trapping activities, where the DPPH trapping activity on the rose petals was stronger than the essential oil of the rose. IC₅₀ value of rose petals < 50 µg / ml while the essential oil of rose > 50 µg / ml. These findings suggest that *Rosa indica* petal extract may be a promising natural source of antioxidants for applications in food, pharmaceuticals, and cosmetics, while REO could also contribute valuable antioxidant effects in specific formulations. Further studies exploring their antioxidant mechanisms and potential synergistic effects are recommended to optimize their utilization in various industries.

Keywords: *Rosa indica*, antioxidant, Rose Essential Oil, radical scavenging, DPPH.