

Comparison of antioxidant capacities in selected fruit peels

ABSTRACT

Fruit peels are known for their antioxidant properties, making them a potential source of natural antioxidants. This study examines the antioxidant capacity, total phenolic content, and total flavonoid content of *Citrus maxima* (pomelo), *Punica granatum* (pomegranate), *Garcinia mangostana* (mangosteen), *Mangifera indica* (mango), *Ananas comosus* (pineapple), *Nephelium lappaceum* (rambutan), and *Citrullus lanatus* (watermelon). Ultrasonic-assisted extraction in 70% ethanol of oven-dried fruit peels was followed by UV-Vis spectrophotometer analysis of antioxidant activity, total phenolic content, and total flavonoid content. In the antioxidant activity study, pineapple peels exhibited the highest antioxidant activity with the lowest IC₅₀ values, followed by rambutan peels and pomelo peels. All the fruit peels had IC₅₀ values ranging from 1041 µg/ml to 6854.22 µg/ml, representing the concentration required for 50% radical scavenging. Quantification of total phenolic content unveiled significant variations, ranging from 6.595 mg/g to 12.70 mg/g. Remarkably, rambutan peels showcased the most abundant phenolic content, followed by pineapple, whereas pomelo peels exhibited comparatively lower levels. The total flavonoid concentration ranged from 4.57 mg/g to 9.23 mg/g, with pineapple peels having the highest, rambutan peels second, and pomelo peels last. These findings offer valuable insights into the diverse antioxidant profiles found in fruit peels, emphasizing their potential as abundant sources of natural antioxidants for various health and industrial applications.