

Phenolic profile and antioxidant activities of Rambutan (*Nephelium lappaceum*) and Pulasan (*Nephelium mutabile*) peels

Yahya, Izzah Hayati; Hamid, Hazrulrizawati Abd

^a Faculty of Industrial Sciences and Technology, Universiti Malaysia Pahang, Lebuhraya Tun Razak, Gambang, Kuantan, Pahang, 26300, Malaysia

ABSTRACT

Rambutan (*Nephelium lappaceum*) and pulasan (*Nephelium mutabile*) are consumed fresh, canned or processed in human daily life, and the peels are usually discarded as waste. This research is aimed to identify the phenolic compounds and antioxidant activities of the peels of both species. Methanol extract, ethyl acetate and diethyl ether of rambutan and pulasan peels were evaluated for total phenolic content, total flavonoid content and antioxidant activities including α , α -diphenyl- β -picrylhydrazyl (DPPH) radical scavenging activity, ferric reducing antioxidant power (FRAP) and cupric reducing antioxidant capacity (CUPRAC). The phenolic compounds were identified in the methanol extract of both rambutan and pulasan peels by using UPLC-QTOF/MS. The methanol peel extract for both rambutan and pulasan exhibits the highest total phenolic and total flavonoid content. The methanol extracts of both rambutan and pulasan peels were found to have high antioxidant activities through three different antioxidant assays. The order of antioxidant activity for various extracts was methanol > ethyl acetate > diethyl ether. The abundant phenolic compounds in methanol peel extracts are geraniin, mulberrofuran A, gigantol and arecatannin. The results showed methanol extract of rambutan and pulasan peels with high content of phenolics and the greatest antioxidant properties have the potential to be developed as a functional food.

KEYWORDS

Antioxidant activities; *Nephelium lappaceum* L.; *Nephelium mutabile*; Phenolic compounds

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