

Comparison of Antioxidant Properties in Juiced and Brewed Carica Papaya Leaves Extracts

ABSTRACT

Carica papaya is widely cultivated not only for its delicious fruit, but also for its medicinal properties. In Malaysia, papaya leaf is perceived to cure many ailments. Recently, papaya leaves extract was reported to possess anti-dengue properties. Some researchers suggested that the antioxidants in papaya leaf contributing to its anti-dengue effects. This study compared two common household methods to prepare papaya leaves extracts as medicinal supplement, namely juicing and brewing, in terms of total phenolic content (TPC), total flavonoid content (TFC) and antioxidant activity based on ferric reducing antioxidant power (FRAP) and 2,2-diphenyl-1-picryl-hydrazyl-hydrate (DPPH) free radical scavenging assays. The results obtained are as follows: TPC (in mg GAE/g) were 6.05 ± 0.05 and 4.17 ± 0.05 ; and TFC (in mg QUE/g) 1.38 ± 0.02 and 0.30 ± 0.07 for brewing and juicing, respectively. Meanwhile, for the antioxidant activities: 6.29 ± 0.25 mg TE/g on FRAP and 52% scavenging activity with IC₅₀ of 926.31 ± 2.21 mg TE/g on DPPH for brewing; and 8.59 ± 0.22 mg TE/g on FRAP and 60% scavenging activity with IC₅₀ of 758.02 ± 9.32 mg TE/g for juicing. Pearson correlation analysis showed a strong, positive correlation between TPC and TFC and their antioxidant activities, with $r^2 > 0.900$ for all of the analyses. Overall, papaya leaves extract prepared by brewing contained higher ($p < 0.05$) TPC, TFC and activities compared to juicing. The results suggest that antioxidant contents in papaya leaves extracts are readily influenced by the preparation methods used.