

## Nutritional and phytochemical profiling of *Garcinia quaesita* dried fruit rinds: a comparative study of commercially available samples in Sri Lanka

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The fruit rind of *Garcinia quaesita*, commonly known as “Goraka” in Sri Lanka, has been utilized in Southeast Asia as a flavor enhancer and food preservative. This study compares the proximate composition and phytochemical properties, including in vitro antioxidant activity, of five different commercially available samples of dried *G. quaesita* rinds (assigned A–E) collected from the Panadura region, Sri Lanka, to minimize environmental variability. Four samples (A–D) were packaged under specific commercial brands with labeled containers, while sample E was a commonly retailed, unpackaged product without branding. Proximate composition, including fat content, crude protein, fiber, moisture, and ash, was analyzed using standard AOAC methods with slight modifications. Phytochemical evaluations included total flavonoid content (TFC), total phenolic content (TPC), and antioxidant activity. All measurements were triplicated, and statistical analysis was carried out using ANOVA followed by Tukey’s HSD post-hoc test. Sample E exhibited the highest moisture content, indicating greater water absorption due to prolonged

atmospheric exposure. It also showed the highest fat content ( $10.29 \pm 0.40\%$ ), while B had the lowest ( $6.33 \pm 0.16\%$ ), with a significant difference ( $p < 0.05$ ). Sample A demonstrated significantly higher fiber and ash contents. Protein levels ranged from 3.09% to 4.60%. Sample E had the highest TFC ( $117.49 \pm 1.58$  mg CE/g), with no significant difference between samples A and D. The TPC of A, E, and C showed slight variation, while samples B ( $52.66 \pm 0.83$  mg GAE/g) and D ( $81.86 \pm 0.61$  mg GAE/g) had significantly higher levels. Antioxidant activity, assessed by  $IC_{50}$  from the DPPH (2,2-diphenyl-1-picrylhydrazyl) assay, followed the order  $A < E < B < D < C$ , with sample A ( $142.8 \pm 18.6$   $\mu\text{g/mL}$ ) showing the highest and C ( $328.1 \pm 12.7$   $\mu\text{g/mL}$ ) the lowest activity. The results reveal notable variability in proximate and phytochemical profiles among *G. quaesita* products, likely due to differences in preparation and environmental exposure.

### Keywords:

*Garcinia quaesita*, Proximate composition, Flavonoid content, Phenolic content, Antioxidant activity