

**ANTIOXIDANT POTENTIAL AND NUTRITIONAL COMPOSITION OF PEEL AND SEEDS OF *Flacourtia indica* FRUIT**

**J.M.H.M. Jayasinghe\* and M.K.B. Weerasooriya**

*Department of Chemistry, Faculty of Science, University of Kelaniya, Kelaniya, Sri Lanka*

*\*harshajayasinghe654@gmail.com*

*Flacourtia indica* is a valuable natural product used to treat various diseases and functional disorders. Few studies have been carried out on the antioxidant potential of the fruit flesh, but nothing has been reported on the non-edible portion. Hence, here we analysed the antioxidant properties and nutritional composition of fruit seeds and peels. The methanolic extracts were prepared. Antioxidant activity was determined by 2,2-diphenylpicrylhydrazyl (DPPH) assay, ferric reducing antioxidant power (FRAP), total phenol (TPC), total flavonoid (TFC), total anthocyanin (TAC) and proanthocyanidin (ProAc) contents were also determined. Under the proximate analysis, moisture, ash, lipid, fibre, protein, carbohydrate, and calorie contents were evaluated. IC<sub>50</sub> and TPC, FRAP values of the peel were found as 0.9518 mg L<sup>-1</sup>,  $1.884 \times 10^3 \pm 3.31$  mg Gallic acid per 100 g,  $33.258 \pm 0.613$  Fe<sup>2+</sup> mol dm<sup>-3</sup>, respectively. TAC and ProAc of peel were  $32.641 \pm 0.166$  (mg L<sup>-1</sup>) and  $8.3038 \pm 0.0293$  (mg CAE g<sup>-1</sup>), respectively. All the above values were higher than those in seeds. These data indicate that peel possesses a higher antioxidant capacity than seeds, and the literature reported values for fruit flesh. Moisture, lipid, ash, protein, carbohydrate contents and the calorie value of the peel were found as  $15.203 \pm 0.267\%$ ,  $9.277 \pm 0.165\%$ ,  $13.927 \pm 0.488\%$ ,  $22.411 \pm 0.535\%$ ,  $29.662 \pm 0.665\%$  and 291.785 kcal per 100 g, respectively and higher than those of seeds. The fibre content of the seed was found as  $50.960 \pm 0.484\%$  and higher than that in the peel. One-way analysis of variance (ANOVA) was performed using MINITAB 17 software. These findings reveal that the fruit peel of *F. indica* is a good source of natural antioxidants rich with nutrients that can be utilised as a value-added product with high therapeutic and nutritional value. Seeds can be utilised as a good source of fibre and can be developed up to an alternative food supplement.

**Keywords:** Antioxidant activity, *Flacourtia indica*, FRAP value, Nutritional composition