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Antioxidant Potential of Some Selected Underutilized Fruit Species Grown in Sri Lanka

LA Wickramaarachchi[1], AI Kuruppu[1], P Ranasinghe[2], T Herath[2], and KW Samarakoon[1#]

[1]Institute for Combinatorial Advanced Research and Education, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka

[2]Modern R&D Complex, Industrial Technology Institute, Halbarawa Gardens, Malabe, Sri Lanka

[#]samarakoonk@kdu.ac.lk

Abstract

Despite having a wide variety of fruits and being one of the world's biodiversity hotspots, Sri Lanka's resources are still mostly untapped. Secondary metabolites known as antioxidants have the power to lessen oxidative stress that can lead to a number of diseases, including cancer, inflammatory disorders, cardiovascular diseases, and age-related diseases. Underutilized fruits in Sri Lanka are reported to have antioxidant properties, however, comparative studies are limited. The present study was carried out to investigate the bioactivity compounds and antioxidant capacity of four heat pump- dried underutilized fruit powders collected, including *Cynometra cauliflora* L. (Sin: Naminan), *Manilkara zapota* L. (Sin: Sapodilla), *Flacourtia indica* L. (Sin: Ugurassa), and *Elaeocarpus serratus* L. (Sin: Veralu) were used in this study. Methanolic (100%) extracts (MEs) of fruits were evaluated for Total Polyphenolic Content (TPC), Ferric Reducing Antioxidant Power (FRAP), and Oxygen Radical Absorbance Capacity (ORAC) (n = 3 each). Results showed significant differences ($P < 0.05$) between extracts. Among the studied fruits, *F. indica* exhibited the highest antioxidant activities for TPC, TFC, and ORAC. The mean TPC, TFC, FRAP and ORAC antioxidant properties of MEs were 8.95 $\pm$ 0.25 mg Gallic acid equivalent/g, 8.75 $\pm$ 0.07 mg Quercetin equivalent/g, 51.39 $\pm$ 0.24 mg, and 15.58 $\pm$ 3.34 mg Trolox equivalents/g heat pump dried fruit powder, respectively. TPC and ORAC values are significantly ($p < 0.05$) different and have a moderate positive correlation however, TPC and FRAP values have significantly different negative moderate correlations. TFC and FRAP values have significantly different negative high correlation but TFC and ORAC values have weak positive correlation. Monomeric anthocyanin was not detected for four fruit types. The results revealed that these underutilized fruits can be used to develop formulations with improved antioxidant capacity as sources of natural antioxidants.

Keywords: *Underutilized fruit, Antioxidant properties, Correlation*