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Antioxidant properties, contents of vitamin C, total phenolic, total flavonoid and dietary iron of selected Sri Lankan fruit species

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Sri Lanka is a tropical country with a large diversity of fruits, including a number of utilized as well as underutilized species. Fruits are known to be associated with pharmacological properties, due to presence of large quantities of antioxidants and minerals such as dietary iron. As Non-Communicable Diseases are the major health risk locally and globally, consumption of natural sources rich with anti-oxidants is a good measure to reduce the risk. Therefore, this study aimed to investigate antioxidants properties and dietary iron content in some selected common and underutilized fruits in Sri Lanka. The ascorbic acid (AA) content, total vitamin C content (TVC), 2,2-diphenyl-1-picrylhydrazyl (DPPH) scavenging activity, ferric ion reducing antioxidant power assay (FRAP), total phenolic content (TPC), total flavonoid content (TFC) and Iron (Fe) content of 12 Sri Lankan fruit cultivars namely, *Musa* sp. (banana), *Carica papaya* (papaw), *Ananas comosus* (pineapple), *Psidium guajava* (guava), *Citrullus lantus* (watermelon), *Phyllanthus emblica* (gooseberry), *Averrhoa bilimbi* (bilimbi), *Averrhoa carambola* (star fruit), *Cynometra cauloflora* (naminan), *Spondias dulcis* (jamaica plum), *Syzygium jambos* (rose apple) and *Anacardium occidentale* (cashew apple) were studied following the standard procedures. Among the studied fruits, *P. emblica* showed the highest anti-oxidant properties such as TVC (829.9 mg ascorbic acid equivalents (AAE)/ 100g), TPC (2701.7 mg gallic acid equivalents/ 100g), free radical quenching power in DPPH (IC₅₀, 1.0 mg/ mL), FRAP value (2070.3 μmol FeSO₄/ g), and *A. occidentale* showed the highest AA (189.2 AAE/ 100g) and TFC (117.5 mg quercetin equivalents/ 100g). The highest iron content was observed in *P. guajava* (1.1 mg/ 100g) followed by *A. occidentale* and *P. emblica*. According to this study, TVC, AA, TPC and TFC showed strong correlations with DPPH and FRAP assays. As the conclusion, *P. emblica* which is highly available underutilized fruit in Sri Lanka has the highest antioxidant potential and significant iron content.

Keywords: antioxidants, dietary iron, fruits, vitamin C