

## **ANTIOXIDANT PROPERTIES OF SELECTED COMMONLY CONSUMED AND UNDERUTILIZED FRUITS IN SRI LANKA**

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A diet rich in fruits is associated with lower risk for chronic degenerative diseases. The increased interest in powerful antioxidant activity of plant phytochemicals outlined the necessity of determining them in Sri Lankan fruits.

The objective of this study was to determine the antioxidant capacity and the content of total soluble phenolics (TPC), total flavonoids (TFC) and vitamin C in selected fruits grown in Sri Lanka. Samples of sixteen selected commonly consumed fruits; papaya (*Carica papaya*), pineapple (*Ananas comosus*) and mango (*Mangifera indica*) and underutilized fruits; guava (*Psidium guajava*), star fruit (*Averrhoa carambola*), ceylon olive (*Elaeocarpus serratus*), velvet tamarind (*Dialium ovoideum*), star gooseberry (*Phyllanthus acidus*), beal fruit (*Aegle marmelos*), java plum (*Syzygium cumini*), grapefruit (*Citrus paradisi*), sweet orange (*Citrus sinensis*), lime (*Citrus aurantifolia*), mangosteen (*Garcinia mangostana*), wood apple (*Limonia acidissima*) and passion fruit (*Passiflora edulis*) were collected from farms and home gardens were analysed for total antioxidant capacity, TPC, TFC and vitamin C content using the ferrous reducing antioxidant power (FRAP) assay, Folin-Ciocalteu assay, aluminium chloride colourimetric and vitamin C content assay (AOAC method), respectively.

The fruits had a wide range of total antioxidant capacity in terms of FRAP values. Java plum scored the highest FRAP value ( $120.62 \pm 0.97 \mu\text{mol FeSO}_4/\text{g}$  fresh fruit) followed by beal fruit ( $68.75 \pm 1.69 \mu\text{mol FeSO}_4/\text{g}$  fresh fruit), star gooseberry ( $60.71 \pm 2.44 \mu\text{mol FeSO}_4/\text{g}$  fresh fruit) and velvet tamarind ( $39.43 \pm 6.17 \mu\text{mol FeSO}_4/\text{g}$  fresh fruit). The maximum TPC was found in beal fruit ( $14.88 \pm 0.56 \text{ mg GAE}/\text{g}$  fresh fruit), which was followed by velvet tamarind ( $10.97 \pm 1.32 \text{ mg GAE}/\text{g}$  fresh fruit) and java plum ( $9.04 \pm 0.45 \text{ mg GAE}/\text{g}$  fresh fruit). Lowest TPC value was recorded for papaya ( $0.08 \pm 0.04 \text{ mg GAE}/\text{g}$  fresh fruit). Beal fruit ( $6.15 \pm 0.35 \text{ mg CE}/\text{g}$  fresh fruit) and velvet tamarind ( $6.04 \pm 0.44 \text{ mg CE}/\text{g}$  fresh fruit) yielded comparatively higher TFC values and java plum ( $1.88 \pm 0.17 \text{ mg CE}/\text{g}$  fresh fruit) scored third highest value. The highest ascorbic acid content was observed in guava ( $1.37 \pm 0.36 \text{ mg AAE}/\text{g}$  fresh fruit) followed by papaya ( $0.64 \pm 0.24 \text{ mg AAE}/\text{g}$  fresh fruit) and Mango ( $0.61 \pm 0.14 \text{ mg AAE}/\text{g}$  fresh fruit). Citrus fruit species such as sweet orange, grapefruit and lime also showed comparatively higher vitamin C values.

In conclusion, among selected fruits, underutilized fruits had shown relatively higher level of antioxidant capacity, TPC, TFC and vitamin C content than the commonly consumed fruits. Especially beal fruit, java plum and velvet tamarind are good sources of antioxidants.

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