

## Antioxidant Activity of Selected Ten Underutilized Fruit Species

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The study was conducted to assess the antioxidant potential of ten underutilized fruit species namely *Phyllanthus emblica* L., *Flacourtia* sp., *Elaeocarpus serratus* L., *Phyllanthus acidus* (L.) Skeels, *Averrhoa carambola* L., *Averrhoa bilimbi* L., *Cynometra cauliflora* L., *Morus* sp., *Spondias* sp. and *Manilkara zapota* (L.) P.Royen grown in Sri Lanka. Fruit extracts were prepared by centrifuging (4500 rpm) finely ground fresh fruit samples (20 g) with distilled water (40 ml) for 90 minutes. The extraction was repeated twice and the supernatants were used for analysis. Total Ascorbic Acid Content (TAsC) was determined using an iodometric titration technique, calculated as mol per gram of fresh weight. Antioxidant potential was determined using DPPH• and ABTS•+ radical scavenging assays. The DPPH• Radical Scavenging Activity (RSA) of the extracts was expressed as IC<sub>50</sub> values. The ABTS•+ activity (RSA) was calculated as percentage of discoloration. This experiment was conducted by following complete randomized design with 3 replicates. Ascorbic acid was used as a positive control and distilled water was used as a negative control. The TAsC varied among the species from  $0.125 \times 10^{-3} \pm 0.000025$  mol g<sup>-1</sup> of fresh fruit of *C. cauliflora* L. to  $4.608 \times 10^{-3} \pm 0.0001665$  mol g<sup>-1</sup> of fresh fruit of *P. emblica* L. The TAsC and antioxidant activity (DPPH• and ABTS•+ assays) were found in order to, *C. cauliflora* L. < *Spondias* sp. < *A. carambola* L. < *Morus* sp. < *P. acidus* L. < *A. bilimbi* L. < *E. serratus* L. < *Flacourtia* sp. < *M. zapota* L. < *P. emblica* L. The significant antioxidant potential was possessed *P. emblica* L. as it showed  $93.38 \pm 0.97\%$  ABTS•+ discoloration and  $28.03 \pm 1.81$  µg ml<sup>-1</sup> of fresh fruit needed for IC<sub>50</sub>. The lowest antioxidant potential was possessed *C. cauliflora* L. as it showed  $1.75 \pm 1.16\%$  ABTS•+ discoloration and  $381.1 \pm 3.15$  µg ml<sup>-1</sup> of fresh fruit needed for IC<sub>50</sub>. These results suggested that underutilized fruit species could be exploited as an ingredient in developing a potential antioxidant supplement.

**Keywords:** Antioxidants, Fruits, DPPH, ABTS, IC<sub>50</sub>