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Antioxidant properties of *Moringa oleifera* leaves cultivated in Sri Lanka

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Epidemiological studies have shown that foods rich in antioxidants provide protection against multiple diseases. Plants and their products are rich sources of phytochemicals and have been found to possess a range of biological activities including antioxidant activity. *Moringa oleifera* Lam. (Family: Moringaceae) known as Murunga in Sinhalese, is reported to have antioxidant activity. Recent research findings have shown that the agro climatic location has a profound effect on the degree of antioxidant activity of *M. oleifera* leaves. However, no study has been conducted in the country to evaluate the antioxidant properties of the leaves of the indigenous *M. oleifera* in Sri Lanka. The present study evaluated the antioxidant properties of the leaves of *Moringa oleifera* cultivated in Sri Lanka.

Freeze-dried 70 % methanolic extract of *Moringa oleifera* leaves was used in this study. Antioxidant properties were evaluated in terms of the total polyphenolic content (TPC) (n=9), and *in vitro* 1,1-diphenyl-2-picryl-hydrazyl (DPPH) radical scavenging (n=3), and 2-azino-bis (3-ethylbenzothiazoline-6-sulfonic acid [$ABTS^{\bullet}$] radical scavenging (n=3) antioxidant assays. Mean TPC was 10.08 ± 0.70 mg gallic acid equivalents/g of leaves. The IC_{50} of DPPH and $ABTS^{\bullet}$ radicals scavenging activities were 2.31 ± 0.04 and 0.36 ± 0.00 mg/ml (Trolox IC_{50}: DPPH =7.60 ± 0.30 µg/ml; $ABTS^{\bullet}$ = 3.45 ± 0.30 µg/ml) and Trolox equivalents of DPPH and $ABTS^{\bullet}$ radicals scavenging activities were 243.39 ± 3.69 µmol/100g and 716.80 ± 11.71 µmol /100g leaves respectively. Radical scavenging activity by DPPH and $ABTS^{\bullet}$ assays were dose dependent (DPPH: R^2=0.99; $ABTS^{\bullet}$: R^2=0.97, $P < 0.05$). Methanolic extract of *Moringa oleifera* leaves demonstrated significantly high ($P < 0.05$) $ABTS^{\bullet}$ radical scavenging activity compared to the DPPH radical scavenging activity. It is concluded that *Moringa oleifera* leaves possess markedly high antioxidant properties and their daily consumption may play an important role in prevention of oxidative stress associated chronic diseases.

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