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**Phytochemical contents and antioxidant capacity of different parts of *Momordica charantia* Linn
(Cucurbitaceae)**

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Momordica charantia Linn is an herbal climber grown in tropical and subtropical regions, belonging to the family Cucurbitaceae. Different parts of *Momordica charantia* are used for the treatments for various diseases, including cholera, bronchitis, anemia, blood diseases, ulcer, diarrhea, dysentery, and gonorrhoea, and as asexual tonic, in *Ayurveda* and traditional systems of medicine in Sri Lanka. However, studies on the therapeutically important active components present in different parts of *Momordica charantia* are scattered or lacking. Therefore, the present study was undertaken to determine the Total Antioxidant Capacity (TAC), Total Phenol Content (TPC) and Total Flavonoid Content (TFC) of different parts (leaf, stem, root, and fruit) of domesticated and undomesticated populations of *Momordica charantia* were collected from Western and North Western provinces in Sri Lanka. The TAC, TPC, and TFC were determined using Ferric Reducing Antioxidant Power Assay (FRAP), modified Folin-Ciocalteu colorimetric method, and aluminium nitrate colorimetric method, respectively. All tested parts of both populations exhibited the presence of TAC, TPC, and TFC. The highest values for all chemical tests of TAC, TPC, and TFC resulted from the leaf extract of both undomesticated (7.8 ± 0.25^a mg Trolox Equivalent / g DW, 7.22 ± 0.33^a mg Gallic Acid Equivalent / g DW and 13.14 ± 0.25^a mg Rutin Equivalent / gDW, respectively) and domesticated (5.51 ± 0.14^b mg Trolox Equivalent / g DW, 7.45 ± 0.54^a mg Gallic Acid Equivalent / g DW and 14.19 ± 1.07^a mg Rutin Equivalent / gDW, respectively) populations. The order of increase was leaf>stem>fruit>root of both *Momordica* populations. It is concluded that presence of biologically active molecules in all parts of the plant demonstrate its future potential in the nutraceutical industry.

Keywords: Cucurbitaceae, *Momordica* populations, Antioxidant capacity, flavonoids, phenolics, plant parts

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