Evaluation of Antioxidant Capacity of Selected Sri Lankan Herbs Focusing on Hair Growth

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Diverse ecosystems in Sri Lanka support a broad-spectrum medicinal plant. The global plant-based cosmetics market has grown dramatically due to rising consumer awareness of the long-term health benefits associated with natural ingredients. The present study aims to investigate the antioxidant capacity of selected twelve herbs in Sri Lanka, including *Trigonella foenum-graecum* L, *Centella asiatica* (L.), *Alternanthera sessilis* (L.) R.Br. ex-DC, *Indigofera tinctoria* L, *Phyllanthus emblica* L, *Coscinium fenestratum* (Gaertn.) Colebr, *Adenanthera pavonina* L, *Azadirachta indica* L, *Hibiscus rosa-sinensis*, *Cyperus rotundus* L, *Bacopa monnieri* (L.) Wettst, and *Murraya koenigii* (L.) Spreng. These plants were selected based on a literature review of their potential to promote hair growth. In the initial phase of the study, Total Phenolic Count (TPC) and the Total Flavonoid Count (TFC) of ethanolic and water extracts were examined. TPC of ethanolic extracts for *Trigonella foenum-graecum* L, *Centella asiatica* (L.), *Alternanthera sessilis* (L.) R.Br. ex-DC, *Indigofera tinctoria* L, *Phyllanthus emblica* L, *Coscinium fenestratum* (Gaertn.) Colebr, *Adenanthera pavonina* L, *Azadirachta indica* L, *Hibiscus rosa-sinensis*, *Cyperus rotundus* L, *Bacopa monnieri* (L.) Wettst, and *Murraya koenigii* (L.) Spreng were found to be 208.77±2.34, 497.72±3.18, 660.63±5.10, 859.15±4.80, 940.4±5.20, 383.27± 2.07, 855.65±4.17, 839.89±5.68, 808.36±8.36, 371.26±4.96, 304.67±4.35 and 889.36±2.36 in mg of gallic acid eq/g of extract respectively. The TFC of the ethanolic extract were 123.33±3.48, 307.33±2.94, 106.67±2.48, 173.67±3.33, 424.50±3.76, 597.67±5.76, 196.06±3.80, 76.87±2.50, 256.33±4.14 and 196.06±1.80 mg of quercetin eq/ g of extract, respectively, with the excepton of *Indigofera tinctoria* L and *Coscinium fenestratum* (Gaertn) Colebr, which did not show significant functional capacity for promoting hair growth. The findings from this study can be used to develop herbal hair care products utilizing these tested plants.

Keywords: *Antioxidant Capacity, Hair Growth, Herbs, Sri Lanka*