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Estimation of Total Phenolic Content on Stem Bark Extracts of Selected Sri Lankan Medicinal Plants

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Phenolic compounds embraces a wide range of plant substances which possess common aromatic ring bearing one or more hydroxyl substituents. *Albizia lebeck*, *Albizia odoratissima*, *Adenantha pavonina* and *Samanea saman* belongs to the sub family Mimosoidea, family Fabaceae and is of high medicinal importance. The objective of this work was to determine the Total Phenolic Content (TPC) of methanol and aqueous stem bark extracts of four plant species to evaluate their biodiversity.

Sequentially extracted to solvents hexane, chloroform, methanol and aqueous extracts of four plants were subjected to phytochemical screening and phenolic compounds flavonoids and tannins were present in both methanol and aqueous stem bark extracts. Total phenolic content of both extracts of four plants were determined by spectrophotometry using Gallic acid as the standard. Briefly 1ml of the diluted sample extracts were transferred in duplicate to separate tubes containing 5ml of a 1/10 dilution of Folin – Ciocalteus reagent in water. Sodium carbonate solution (7.5%) was added and allowed to stand at room temperature for two hours before absorption at 765nm were measured against distilled water. The TPC was expressed as Gallic Acid equivalents (GAE) in g/kg material. The mean TPC of the methanol extracts (ME) and aqueous extracts (AE) of each medicinal plant *A.lebeck*, *A.odoratissima*, *A. pavonina*, and *S. saman* were 745.99 ± 0.36 (ME), 714.39 ± 0.24 (AE), 639.78 ± 0.21 (ME), 654.45 ± 0.19 (AE), 831.76 ± 0.22 (ME), 809.75 ± 0.19 (AE). 226.08 ± 0.28 (ME), 260.58 ± 0.15 (AE) respectively. Flavonoids and tannins were found to be present in stem bark extracts of these plants. Presence of these important natural phenolic compounds shows that there is antioxidant activity as these are known to be biologically active through different mechanisms. Tannins have anticancer and antimicrobial activities and also biologically active by the iron sequestration, hydrogen bonding or specific interactions with vital proteins such as enzymes. Therefore these findings would be useful in developing new drugs.

Key words : Aqueous Extracts, Methanol; Phenolic Content