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Bioactivity of methanolic leaf extracts of *Pterocarpus marsupium* and *Sauropus androgynus*

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This study determines the bioactivities of the leaves of three abundantly distributed plants in Sri Lanka. Healthy leaves of Sauropus androgynus ('Japan Batu') and Pterocarpus marsupium ('Gammalu') were collected from the Central Province of Sri Lanka. Plant samples were cleaned, air-dried, and ground into a fine powder. Extracts were obtained using methanol by sonication. The antioxidant potential of crude extract was tested by 2,2-diphenyl-1picrylhydrazyl (DPPH) radical scavenging and Ferric Reducing Antioxidant Power (FRAP), cytotoxicity by brine shrimp lethality, phytotoxicity by the lettuce seed germination and, α amylase inhibitory assays. Results of the DPPH radical scavenging assay revealed that the extracts S. and rogynus have strong antioxidant activity (IC₅₀ of 38.12 ± 0.03 mg L⁻¹) and P. *marsupium* has moderate antioxidant activity (IC₅₀ 166.01 \pm 0.02 mg L⁻¹) in comparison with the positive control: ascorbic acid (IC₅₀ 1.97 \pm 0.02 mg L⁻¹). For FRAP assay, none of the crude extracts resulted in high FRAP values (0.42-0.38 µmol of FeSO₄/mg of the sample) compared to the positive control trolox (12.07 \pm 0.03 µmol of FeSO₄/mg of the sample). Sauropus androgynus and P. marsupium showed weak lethality against brine shrimps with LC₅₀ of 1900.74 and 1685.80 mg L⁻¹, respectively as compared to the positive control $K_2Cr_2O_7$ (LC₅₀ 35.16 mg L^{-1}). The IC₅₀ for percentage root and shoot inhibition of both plant extracts were above 1000 mg L⁻¹ than the positive control, abscisic acid (shoot: 0.99 and root: 1.11 mg L^{-1}) indicating the weak phytotoxicity of these plants. Further, none of the extracts showed enzyme inhibitory activity against the α -amylase. In summary, S. androgynus leaf extract showed strong and P. marsupium leaf extract showed moderate antioxidant potential with respect to DPPH assay.

Keywords: Antioxidant activity, cytotoxicity, enzyme inhibitory activity, phytotoxicity