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## ***In vitro* antioxidant, cytotoxic, and phytotoxic potential of leaf extracts of four Sri Lankan plants**

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Plant kingdom is rich in secondary metabolites with different bioactivities. This study determines antioxidant potential, cytotoxicity, and phytotoxicity of four abundantly distributed plant species in Sri Lanka. Leaves of *Averrhoa bilimbi* (Oxalidaceae/Bilin), *Nyctanthes arborescens* (Oleaceae/ 'Sepalika'), *Rivina humilis* (Petiveriaceae/ 'Bloodberry'), and *Swietenia mahogani* (Meliaceae/ 'Mahogany') were collected from the Central Province of Sri Lanka and shade dried. They were ground and extracted into methanol (MeOH). The antioxidant potential of crude extracts was tested by 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay, cytotoxicity by brine shrimp lethality assay, and phytotoxicity by the lettuce seed germination assay for a concentration series (2000 mg L<sup>-1</sup> – 31.25 mg L<sup>-1</sup>). The results revealed that *S. mahogani* leaves have strong antioxidant potential (IC<sub>50</sub> of 7.74 ± 2.21 mg L<sup>-1</sup>) compared with the IC<sub>50</sub> of positive control: ascorbic acid (IC<sub>50</sub> 1.84 ± 0.12 mg L<sup>-1</sup>). Antioxidant potential of *N. arborescens*, *A. bilimbi* and *R. humilis* extracts showed IC<sub>50</sub> of 122.42 ± 2.09 mg L<sup>-1</sup>, 790.48 ± 9.12 mg L<sup>-1</sup>, 837.78 ± 8.25 mg L<sup>-1</sup> respectively. In the brine shrimp lethality assay, *S. mahogani*, *N. arborescens*, and *R. humilis* showed LC<sub>50</sub> of 830.38 mg L<sup>-1</sup>, 4419.09 mg L<sup>-1</sup>, and 7295.5 mg L<sup>-1</sup>. Cytotoxicity for *A. Bilimbi* was not detected due to 0% Lethality. K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> was used as the positive control for this assay (LC<sub>50</sub> 35.16 mg L<sup>-1</sup>). The IC<sub>50</sub> for root inhibition of *R. humilis*, *A. bilimbi*, *S. mahogani* and *N. arborescens* were 1032.78 mg L<sup>-1</sup>, 1085.72 mg L<sup>-1</sup>, 1587.63 mg L<sup>-1</sup> and 2779.43 mg L<sup>-1</sup> and for shoot inhibition, the values were 2059.05 mg L<sup>-1</sup>, >10000 mg L<sup>-1</sup>, 0.76 mg L<sup>-1</sup> and 1619.71 mg L<sup>-1</sup> respectively. Compared to the inhibition of abscisic acid (shoot inhibition IC<sub>50</sub> 0.99 mg L<sup>-1</sup>, root inhibition IC<sub>50</sub> 1.11 mg L<sup>-1</sup>), *S. mahogani* displayed strong shoot inhibition. These results revealed that *S. mahogani* leaf extract has high antioxidant potential, cytotoxicity, and strong shoot inhibition. *R. humilis* showed a mild potential to inhibit root germination of lettuce seeds.

**Keywords:** *A. bilimbi*, *N. arborescens*, *R. humilis*, *S. mahogani*