

Comparative antioxidant activities of different vegetative parts of *Artocarpus heterophyllus* Lam.

Serasinghe S.M.D.N.¹, Rajkumar G.^{1*} and Sanmugarajah V.²

¹Department of Botany, Faculty of Science, University of Jaffna, Sri Lanka.

²Unit of Siddha Medicine, University of Jaffna, Sri Lanka.

In traditional systems of medicine in Sri Lanka, *Artocarpus heterophyllus* Lam., which is commonly known as the ‘jackfruit’ tree (Moraceae) is widely used to manage the different health conditions which are typically linked to oxidative stress. Natural antioxidants in plants are able to counteract the deleterious effects of oxidative stress. Therefore, there is an increasing interest in employing natural antioxidants as therapeutic agents against different health conditions. The objective of this study was to compare the antioxidant activities of methanolic extracts of leaf, bark, fruit and seeds of *A. heterophyllus*. For this purpose, DPPH and ABTS assays were carried out by using a spectrophotometer following standard procedures in which trolox was used as the standard. Free radical scavenging capacity was determined for three replicates of each sample extract. Based on the results, the methanolic leaf and bark extracts showed the highest DPPH radical scavenging activity (IC₅₀: 112.58±0.25 and 119.94±0.41 mg/ml) while the lowest radical scavenging activity was detected in methanolic seed and fruit extracts (IC₅₀: 512.65±0.5 and 517.56±0.79 mg/ml) compare with the trolox. The ABTS activity was higher in methanolic leaf extract (IC₅₀: 124.54±0.22 mg/ml) while lower values were recorded in methanolic bark, seed and fruit extracts (IC₅₀: 253.69±0.18, 478.88±0.95 and 525.41±0.89 mg/ml) respectively. When considering the assays carried out of the methanolic extracts of *A. heterophyllus* the following decreasing order was founded: leaf > bark > seed > fruit. These findings suggest that *A. heterophyllus* leaves possess the highest antioxidant properties, and therefore could be used for the production of herbal medicines in future.

Keywords: Antioxidant, *Artocarpus heterophyllus*, ABTS, DPPH

*Corresponding author: gowrir@univ.jfn.ac.lk