

PHENOLIC AND FLAVONOID CONTENTS AND FERRIC REDUCING ANTIOXIDANT POWER OF DIFFERENT SOLVENT EXTRACTS OF DEFATTED SEED KERNEL FROM *Terminalia catappa* L. FRUITS

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Terminalia catappa L., known as Indian almond or tropical almond, is a versatile tree species native to tropical regions, including Sri Lanka. In this study, the total phenolic content (TPC), total flavonoid content (TFC), and ferric reducing antioxidant power (FRAP) of defatted residues of kernels from purple and yellow cultivars of *T. catappa* were evaluated. Defatted residues were obtained after the micro screw-press oil extraction. Then, it was sequentially extracted with hexane, dichloromethane (DCM), and methanol, respectively. The TPC, TFC, and FRAP were analysed using relevant assays. Among the extracts, methanol extracts exhibited the highest TPC, with the yellow cultivar showing the highest content (9.52 ± 0.18 mg GAE/g), with no TPC detected in hexane extracts. With regard to TPC, significant differences ($p < 0.05$) were observed between the methanol extracts of two cultivars. Among the extracts, the hexane extracts ($12.65 \pm 0.04 - 49.06 \pm 2.64$ mg CE/g) exhibited the highest TFC values, followed by the DCM extracts ($10.02 \pm 0.06 - 26.61 \pm 1.94$ mg CE/g), while the methanol extracts ($3.29 \pm 0.08 - 12.02 \pm 0.70$ mg CE/g) showed the lowest. Between the cultivars, the yellow cultivar exhibited higher TFC when compared to the purple cultivar in all extracts. The FRAP assay results showed that values were detected only for the methanol extracts; the purple cultivar showed a higher value (0.40 ± 0.02 mmol FeSO₄/g) than the yellow cultivar (0.34 ± 0.01 mmol FeSO₄/g). The FRAP value of the methanol extract was significantly ($p < 0.05$) lower than that of ascorbic acid (41.23 ± 0 mmol FeSO₄/g). These findings underscore the impact of solvent choice on extracting efficiency and antioxidant activity of *T. catappa* kernels.

Keywords: Ferric reducing antioxidant power, *Terminalia catappa* L., Total flavonoid content, Total phenolic content