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Antioxidant activity and phenolic content of different edible tissues of raw cashew nuts

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Epidemiological studies suggest that an increased consumption of foods which have high antioxidant activity can reduce the risk of some cancers and cardiovascular diseases, and this may be attributable to the antioxidant activity of phenolic compounds. The aim of this study was to evaluate the antioxidant activities and phenolic contents of different edible tissues namely whole nuts (kernel + testa) and kernel and testa (skin) of raw cashew nuts of 26 selected cashew accessions.

Ferric Reducing reducing Ability ability of Plasma plasma (FRAP) assay was used to evaluate antioxidant activity. The phenolic content was determined by Folin-ciocalteu ciocalteu method. The range of FRAP values in kernel, whole nut and testa of selected cashew accessions were 0.69 ± 0.07 to 1.01 ± 0.06 mg TE/g, 37.20 ± 4.11 to 92.62 ± 3.40 mg TE/g and 387.83 ± 21.75 to 591.50 ± 43.77 mg TE/g respectively. The total phenolics of kernel, whole nut and testa of selected cashew accessions varied from 0.31 ± 0.03 to 1.55 ± 0.03 mg GAE/g, 4.91 ± 0.04 to 7.07 ± 0.20 mg GAE/g and 264.60 ± 11.46 to 399.70 ± 3.21 mg GAE/g respectively. In testa of all selected cashew accessions, the antioxidant activity and phenolic content were significantly higher than those in whole cashew nuts and kernels. However, lowest antioxidant activity and phenolic content were observed in kernel of all selected cashew accessions. The present study showed a strong positive correlation ($R^2 = 0.99$, $P < 0.0001$) between FRAP values and the total phenolics of cashew nut extracts while indicating that phenolic constituents are the major contributors to the antioxidant activity of cashew nut. The results indicated that cashew testa was significantly high in antioxidant activity and total phenolics when compared to whole cashew nut and kernel.