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In vitro antioxidant activity of leaves and unripen fruits of “Tanin and Vega F1” hybrid papaya on the basis of DPPH free radical scavenging

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Background: Unripen fruit and leaves of papaya are recognized as a remedy for preventing cancer and heart diseases by preventing the oxidation process. Due to the rising need for natural remedies for oxidation-related disease and the increased rate of consumption of hybrid varieties, the antioxidant activity of hybrid papaya was investigated *in-vitro*.

Objective: To find out the antioxidant activity of leaves and unripen fruits of “Tanin and Vega F1” hybrid papaya using IC₅₀ values.

Methods & Materials: The leaves and unripen fruits of “Tanin and Vega F1” hybrid papayas were collected from the Agricultural Research Centre in Jaffna, Sri Lanka. Methanolic and ethyl acetate extracts of leaves and unripen fruits were prepared using the maceration process. Subsequently, 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay was performed separately on the extracts of the papaya samples to determine their antioxidant activities by employing ascorbic acid as the standard. The IC₅₀ values for the extracts were calculated from the respective DPPH assays. The statistical significance was evaluated by the analysis of variance (ANOVA) followed by Tukey’s test using SPSS software. Significance level was set at 0.05.

Results: The results revealed that the methanolic leaf extract of Vega F1 showed greater activity (652.507 µg/ml) and was significantly different (p<0.05) compared to that of the standard ascorbic acid (14.586 µg/ml). The radical scavenging activities of both Tanin and Vega F1 were in the order of Vega F1 leaf methanol extract > Tanin leaf methanol extract > Vega F1 unripe fruit methanol extract > Vega F1 unripe fruit ethyl acetate extract > Tanin unripe fruit methanol extract > Vega F1 leaf ethyl acetate extract > Tanin leaf ethyl acetate extract > Tanin unripe fruit ethyl acetate extract.

Conclusion: This study revealed that the methanolic extract of leaves of Vega F1 showed greater antioxidant activity compared to other extracts which could be a better source of antioxidants.