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Phenolic and flavonoid contents and antioxidant activity of different edible parts of *Artocarpus heterophyllus* Lam. (Moraceae)

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Artocarpus heterophyllus (Jackfruit) is a widely grown perennial fruit tree which belongs to the family Moraceae. The majority of all parts of the plant are being used for medicinal purpose because of having numerous pharmacological properties such as antioxidant, anti-inflammatory, antibacterial, anti-cariogenic, anti-fungal, antineoplastic, hypoglycemic and wound healing effects. The present study was undertaken to determine total antioxidant capacity (TAC), total phenolic content (TPC) and total flavonoid content (TFC) of different edible parts (seeds, bulbs, seed-shells and rags) of fruits of two varieties of jackfruit viz. *Fartherlong* and *Hirosa* in two maturity stages (mature and ripen). The TAC, TPC and TFC were determined using ferric iron-reducing antioxidant power (FRAP) assay, modified Folin-Ciocalteu method and colorimetric method, respectively. Among the results of the tested parts, significantly highest TAC (14.13 ± 0.17 mg TE/ g DW), TPC (9.36 ± 1.41 mg GAE/ g DW) and TFC (18.63 ± 1.07 mg RE/ g DW) were recorded in rags of ripen fruits of *Fatherlong* variety. The lowest TAC, TPC and TFC values were observed in bulbs of ripen fruits in both varieties. Rags and seed-shells had higher TAC, TPC and TFC values than seeds and bulbs. The TAC, TPC and TFC of rags and seed-shells in both varieties have been increased with maturity. However, with maturity slight reduction of TAC, TPC and TFC in seeds and bulbs of both varieties were observed. Furthermore, the results revealed that the TAC showed a significantly strong positive correlation with the TFC ($R^2 = 0.9001$) and with the TPC ($R^2 = 0.822$) and it expresses that the phenolic components contribute significantly to the antioxidant capacity of different edible parts of fruits of *A. heterophyllus*. The present study revealed that rags and seed shells which are normally removed when processing, contain higher bioactive compounds and antioxidant capacity. Therefore, rags and seed-shells of fruits of *Artocarpus heterophyllus* can be used to develop value-added products such as pickles, chutneys, sweets, snacks, jams, etc. instead of disposing of them as waste.

Keywords: Antioxidant capacity, *Artocarpus heterophyllus*, bioactive compounds

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