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Proximate analysis on nonedible portions (fruit peels and seeds) of pomegranate cultivars grown in Sri Lanka

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Pomegranate (*Punica granatum* L., family Punicaceae), because of its high nutritional and nutraceutical value, is a very popular fruit crop among growers and consumers worldwide. Nonedible portion (peel and seed) is reported to be a rich source of biomolecules of immense health significance. Though, nutritional value of fruit juice is being reported and little is known about peel and seed. Hence, the study was targeted at evaluating proximal composition of fruit peel and seed of pomegranate cultivars, *Kalpitiya hybrid*, *Daya* and *Nimali*. Under proximal analysis, moisture content was analyzed using oven drying method, ash content using a muffle furnace, lipid content using Soxhlet extraction, fiber content using acid and alkaline digestion, nitrogen content using Kjeldahl distillation method and carbohydrate content was calculated using an equation. Corresponding proximal analysis values for peel were ranged from 11.3067 ± 0.017% to 15.196 ± 0.217% for moisture content, from 44.79 ± 4.37% to 58.05 ± 3.46% for carbohydrate content, from 1.2613 ± 0.01172% to 3.358 ± 0.113% for ash content, from 0.91±0.09% to 1.41 ± 0.14% for lipid content, from 11.73 ± 0.41% to 19.60 ± 0.84% for crude protein content and from 12.66 ± 1.25% to 15.23 ± 0.87% for fiber content. While corresponding proximal analysis values for seed were ranged from 7.7033±0.0893% to 8.202±0.0552% for moisture content, from 7.227 ± 0.40% to 26.54 ± 2.76% for carbohydrate content, from 1.352 ± 0.00917% to 4.008 ± 0.535% for ash content, from 16.24 ± 0.53% to 21.50 ± 1.29% for lipid content, from 16.24 ± 0.33% to 33.30 ± 4.16% for crude protein content and 28.05 ± 0.13% to 32.50 ± 1.59% for fiber content. *Kalpitiya hybrid* peels and seeds had the highest ash, lipid, protein and fiber content, whereas *Daya* peels and *Nimali* seeds had the highest carbohydrate content. *Daya* seeds and *hybrid* peels had the highest fiber content. Thus, study herein revealed that lipid and protein contents are higher in seeds than the peels, whereas carbohydrate and fiber contents are higher in peels than seeds. Also, peels and seeds exhibit significant percentages of nutritional values comparative to the dry weight, which bears the potential to develop into healthy food ingredients, nutraceuticals that can be used in many applications in food industry.

Keywords: Peel, Pomegranate, Proximal analysis, Seed