

Development of herbal tea from fruit peel of pomegranate cultivars grown in Sri Lanka

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Pomegranate (*Punica granatum* L., family Punicaceae), is used in folklore medicine for the treatment of various diseases. Its peel is a valuable waste rich with a diverse range of bioactive compounds bearing significant antimicrobial, antioxidant, and anticancer activities. This work aims to develop herbal tea using pomegranate peel, which is reported to possess high antioxidant activity. Kalpitiya hybrid(K), Daya(D), and Nimali(N) cultivars were used for the study. Dried peel powder (ppp) was prepared in tea bags and sachet packets and stored in the covered box at room temperature. Their Antioxidant capacity was monitored at every three-week interval for 24 weeks. Consumer acceptability and microbial contaminant were also tested at end of 24th week. Tea prepared by tea bags were labelled as Kalpitiya hybrid (Kw), Daya (Dw), and Nimali (Nw). Tea prepared by sachets were labelled as Kalpitiya hybrid (Kws), Daya (Dws), and Nimali (Nws). The Observed total phenolic content (TPC) (mg GAE/g sample) was higher in Kws, Dws, and Nws than that of Kw, Dw, and Nw, respectively. Similarly, total flavonoid content (TFC) (mg CHE/g sample) was higher in Kws,

Dws and Nws than that of Kw, Dw, and Nw respectively. Ferric reducing antioxidant power (PFRAP) (mmol AAE/g sample) was higher in Kws, Dws, and Nws than that of Kw, Dw, and Nw, respectively. Also, the decline in TPC, TFC, and PFRAP values over a 6-month period is less in Kws, Dws, and Nws than in Kw, Dw, and Nw. Overall, consumer acceptability of all tea samples was at a moderate level. Microbial contamination was well below than the countable level. All these findings suggest that the antioxidant activity of herbal tea, prepared through a sachet, is higher than that prepared by a tea bag and safe to consume even over a 6-month period.

Keywords: Pomegranate peel; Herbal tea; Antioxidants; Anti-cancer.