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**Antioxidant capacity and bioactive compounds of selected herbal tea blends produced in Sri Lanka**

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Tea (*Camellia sinensis* L.), the second most commonly consumed beverage in the world is a rich source of flavonoids. Green tea, the unfermented tea contains mainly catechins whereas black tea, mainly contains thearubigins (TR) and theaflavins (TF) due to fermentation. Before the introduction of tea to Sri Lanka some medicinal herbs which contained phenolic compounds and antioxidant properties were used extensively as beverages. Phenolics are secondary plant metabolites mainly found in medicinal herbs and teas. Recently the blends of tea with medicinal herbs have become popular as value added products worldwide. This study was conducted to determine antioxidant capacity and bioactive compounds (phenolics and flavonoids) of some selected popular herbal tea blends produced in Sri Lanka.

Aqueous extracts of 8 herbal tea blends (viz. Ranawara+Gunpowder, Beli-mal+Gunpowder, Kowakka+Gunpowder, Polpala+Gunpowder, Gotukola+BOP, Karapincha+BOP, Iramusu+BOP and Koththamalli+BOP) were analyzed for total phenolic content (TPC), total flavonoid content (TFC) and total antioxidant capacity (TAC). TAC was determined by Ferric reducing antioxidant power (FRAP) assay. Colorimetric methods were used to quantify total phenolics (Folin-ciocalteu method) and total flavonoids.

Higher TAC was observed in green tea herbal blends than black tea herbal blends. Beli-mal+Gunpowder blend showed the highest TAC ( $80.3 \pm 0.1$  mg TE/ g DW) TPC ( $34.6 \pm 0.1$  mg GAE/ g DW) and TFC ( $9.5 \pm 0.1$  mg RE/g DW) among selected green tea herbal blends whereas lowest TAC, TPC and TFC were recorded in Kowakka+Gunpowder blend. Iramusu+BOP blend had a higher TAC ( $41.8 \pm 0.3$  mg TE/g DW), TPC ( $25.3 \pm 0.6$  mg GAE/g DW) and TFC ( $11.7 \pm 0.4$  mg RE/g DW) while, the lowest was observed for Koththamalli+BOP blend. A strong significant correlation was observed between total antioxidant capacity and total phenolic content ( $R^2 = 0.90$ ,  $p < 0.001$ ). The total flavonoids also showed a good positive correlation ( $R^2 = 0.53$ ,  $p < 0.001$ ) with total antioxidant capacity. The existing positive and significant correlations between total antioxidant capacity and phenolic compounds revealed that phenolic compounds were the dominant antioxidant components in herbal tea blends. Herbal tea blends, polyphenolic beverages, may play an important role as a source of naturally occurring antioxidants.

Keywords: Antioxidant capacity, flavonoids, phenolics, herbal tea