SECTION E2

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Establishment of chemical parameters to distinguish between Sri Lankan teas of different geographical origins

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Unblended Sri Lankan teas are classified as high grown (HG), medium grown (MG) and low grown (LG) based on their geographical origin. In the quality control purposes, it is an added advantage if suitable chemical data that are helpful to distinguish between different teas are available. Present study explains the identification of the geographical origin of teas based on the total phenol, caffeine and catechin contents. Even though the quantities of these substances have been reported, the origin, whether the tea is pure or blended and the particle size of teas have not been specified in such studies.

Total phenol contents (TPC) were determined by Folin-Denis colorimetric method. Caffeine contents (CFT) and catechin contents (CTC) were determined by the comparison of the signal areas of these compounds in HPLC chromatograms using calibration plots. The results indicate that there is no significant difference in the total phenols, caffeine and catechin contents in tea samples collected within a geographical area. However, the compositions of these compounds varied significantly among the tea samples from different geographical origins (HG, MG and LG). The results are summarized in Table 1.

Table 1. Comparison of the TPC, CFT and CTC contents of Sri Lankan teas

Origin	TPC (g kg^{-1})	CFT (g kg^{-1})	CTC (g kg^{-1})
HG	8.58 ± 0.33	8.22 ± 1.69	2.78 ± 0.51
MG	10.85 ± 0.64	10.73 ± 0.90	0.06 ± 0.02
LG	11.65 ± 0.56	29.89 ± 0.94	1.65 ± 0.11

Each data point represents the mean of three replicates + standard deviation

The results indicate that due to widely different quantities of TPC, CFT and CTC, a clear idea about the geographical origin of teas can be obtained by comparison of TPC, CFT and CTC.

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