

633/E2

**An assessment of copper content in BOPF grade Sri Lankan black teas
(*Camellia sinensis* L.) of different agro-climatic elevations**

K R W Abeywickrama^{1*}, A M T Amarakoon² and W D Ratnasooriya³

¹*Analytical Laboratory, Sri Lanka Tea Board, Colombo, Sri Lanka*

²*Biochemistry Division, Tea Research Institute, Talawakelle, Sri Lanka*

³*Department of Zoology, University of Colombo, Sri Lanka*

Copper is an inorganic substance inherently and substantially available in black tea. In addition to the inherent copper it may also be added due to usage of copper fungicides in tea plantations. Copper content in black tea could vary with the soil characteristics in different agro-climatic elevations. Copper compounds in tea is hot water soluble and therefore, it is possible that appreciable amount of copper gets transferred to the Black Tea Brew (BTB). The amount of copper in BTB with respect of the agro-climatic elevations is not scientifically documented. Thus the aim of this study was to assess the copper content in black tea manufactured by orthodox-rotorvane process of three different elevations: low grown (below 600m, average mean sea level), mid grown (600-1200m, amsl) and high grown (above 1200, amsl) of Sri Lanka and in the tea brew using Atomic Absorption Spectrophotometer method.

The results show significantly higher ($P \leq 0.05$) content of copper in black tea of mid grown teas (75.5 ± 4.52 ppm) compared to other two elevations: low grown (39.6 ± 3.62 ppm) and high grown (27.3 ± 0.67 ppm). When considering the copper content in BTB, it was found that an average of 60%, 93% and 66% of copper has been transferred from black tea to the BTB of low grown, mid grown and high grown respectively. The results show that the amount of hot water extractable copper in black teas of all three elevations: low, mid and high grown, varies elevation-dependant manner. Thus the consumption of Sri Lankan black tea of all three elevations may be a good dietary copper supplement for the human.

Acknowledgement: Sri Lanka Tea Board