

# **Determination of the Variation of Biochemical Profile of Commonly Grown Tea (*Camellia sinensis* (L.) O. Kuntze) Cultivar of TRI 2025 in Low Country Agro-ecological Zones**

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There is a unique taste, color and aroma of low country teas compared to other types of tea grown in Sri Lanka. Those properties are governed by the biochemical composition of the tea, basically the tea leaves. However, there was no reported study related to the variation of chemical profile of tea grown in different agro-climatic regions within the low country region. Therefore, this study was conducted to determine the variation of biochemical profile of commonly grown tea (*Camellia sinensis* (L.) O. Kuntze) cultivar of TRI 2025. Fresh tea leaves of TRI 2025 in 5th pruning cycle were randomly collected from eight selected plantations which represent four major tea cultivating agro-climatic regions WL1a, WL1b, WL2a, WL2b in low country. The estates were selected using stratified sampling technique and samples from each stratum were selected randomly from different tea estates in a way of including two estates in each agro-climatic region. The study was conducted during the period of onset of rain, from November to December, 2018. The fresh tea leaves placed on ice immediately after harvesting and transported. The leaf samples were dried at 50 °C for 12 hours and crushed into fine particles. Chemicals were extracted from each sample using 1g of leaf powder in methanol for the analysis of polyphenols and reducing sugars while phosphate buffer was used for proteins extraction. Folin Ciocalteu reagent method Lawry's method and DNS reagent method was used to determine polyphenols, free sugars and total proteins with slight modifications, respectively. This study found that significantly different polyphenol and free sugar contents ( $p < 0.05$ ) were in teas grown in the four agro-ecological regions in low country of Sri Lanka but free total protein contents were not shown the significant difference.

*Keywords:* Agro ecological zones, Free sugar content, Low Country, Polyphenol, Total protein