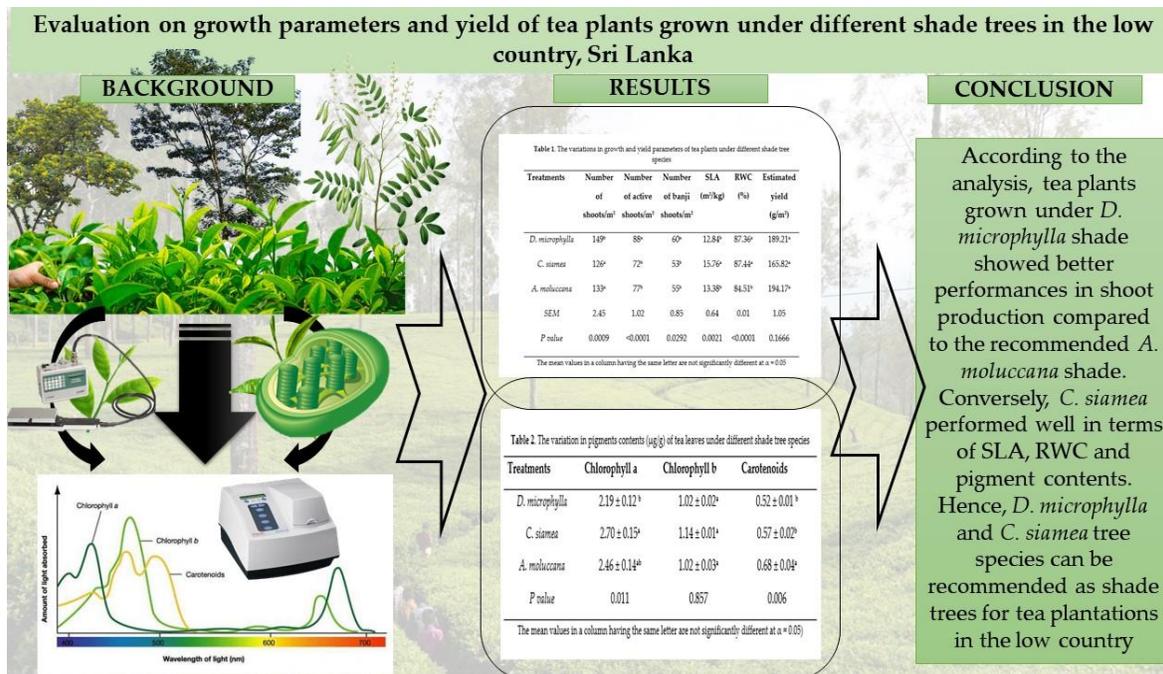


# Evaluation on growth parameters and yield of tea plants grown under different shade trees in the low country, Sri Lanka

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The productivity of tea (*Camellia sinensis* L.) is affected by numerous factors, whereas shade is very crucial. Therefore, this study was conducted to evaluate the effect of different shade trees on growth, yield, and leaf pigments of tea plants grown at Thalgaswella Estate, Galle from September to December, 2019. Newly identified *Derris microphylla* and *Cassia siamea* and the recommended *Albizia moluccana* were selected as shade trees and planted in three different plots having young tea of cultivar TRI2026. The treatments were arranged in Randomized Complete Block Design (RCBD), each plot having 4 shade trees and approximately 25 tea bushes. According to the results obtained from the study, different shade treatments had a significant effect on Specific Leaf Area (SLA), number of active and banji shoots and Relative Water Content (RWC) ( $p < 0.05$ ), while no significant difference was observed in estimated yield ( $p > 0.05$ ). Tea plants grown under *D. microphylla* shade had the highest mean values for the number of active (88/m<sup>2</sup>) and banji (60/m<sup>2</sup>) shoots. The highest SLA was observed in tea plants grown under *C. siamea* (15.76 m<sup>2</sup>/kg) while the tea grown under *D. microphylla* and *C. siamea* showed higher RWC values (87.36 % and 87.44 % respectively) than tea grown under *A. moluccana*, thus indicating their greater drought tolerance. Chlorophyll a and carotenoid contents were significantly affected by different shade trees, while there was no significant differences in Chlorophyll b content. Tea grown under the *C. siamea* had higher Chlorophyll a (2.70 µg/g) and Chlorophyll b (1.14 µg/g) content, whereas higher carotenoids was obtained under the *A. moluccana* (0.68 µg/g) compared to other treatments. Based on these results, it can be concluded that *D. microphylla* and *C. siamea* can be recommended as shade trees in low country tea plantation.

**Keywords:** *Camellia sinensis* L., leaf pigments, relative water content, shade tree, specific leaf area