

Comparison of Yield and Quality Parameters between Organically and Conventionally Grown Tea

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Tea yield and made tea quality may be different in organic and conventional systems due to different inputs and quantities. This study was conducted in the *Uva* region of Sri Lanka on organically and conventionally managed smallholder and medium/ large tea estates during September to December 2022. Monthly yield records from 2016 to 2022 (except December 2022) were collected from the selected tea lands. The percentage of shoots containing a *banji* apical bud with a single adjoining leaf and shoots containing an active apical bud with two or three adjoining leaves were considered as the plucking standard. Sensory evaluation was conducted by five independent, professional tea tasters and samples were rated based on infused leaves, colour, strength, quality, and flavor of the liquor. Total nitrogen content of the made tea was determined using Kjeldahl method. Data were considered as a nested factorial (cultivation system and land category). Parametric data were analyzed by repeated measures ANOVA and sensory evaluation data were analyzed using Friedman's test. Results showed that the conventional smallholder fields had consistently, significantly higher ($p < 0.05$) yields, followed by organic smallholders. Further, the yields of medium/ large scale plantations in both cultivation systems were not significantly different ($p < 0.05$) from each other, but lower than the smallholders of both systems. Large/ medium scale and smallholder organic farmers maintained a significantly higher ($p < 0.05$) plucking standard compared to all conventional farmers. The total nitrogen contents of the made tea from conventional system were significantly higher ($p < 0.05$) than in organic system. The ratings of the tea taster's evaluations were inconsistent between the cultivation systems, but dust-1 grade of conventional and BOP of organic lands had consistently higher ratings from the tea tasters.

Keywords: Conventional, Organic, Plucking standard, Tea, Tea taster's evaluations

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