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EFFECT OF DIFFERENT RATES OF ZINC APPLICATION ON YIELD AND NUTRIENTS STATUS IN TEA (*Camellia sinensis*)

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A field experiment was carried out at St. Coombs Estate, Talawakelle, for a period of three months to examine the effect of different amounts of zinc sulphate applied as foliar on the yield and nutrient composition of tea (*Camellia sinensis*). The experiment was conducted to evaluate the effects of different rates of zinc application on tea yield and leaf nutrients relationships over a three-month period, and to identify the optimum zinc rate. The treatments consisted of five zinc sulphate application levels: 0kg/ha/yr, 2.75 kg/ha/yr, 5.5kg/ha/yr, 8.25 kg/ha/yr, 16.5kg/ha/yr. The highest fresh leaf yield was obtained from the treatment 5.5kg/ha/yr with which recorded a 26.7% increase compared to the control. The treatment 16.5 kg/ha/yr with showed the highest quadrat yield, possibly due to enhanced shoot growth stimulated by zinc through its role in the production of indole-3-acetic acid (IAA). According to the results, no significant interrelationship was observed between different rates of zinc application and the concentrations of nutrients such as Mg, Ca, P, Mn, and Fe. Potassium(K) and nitrogen (N) showed intermediate and weak correlations, respectively. Leaf zinc concentration increased significantly with increasing zinc application rates, with the maximum zinc concentration (46 mg/kg) recorded at the highest application rate of 16.5 kg/ha/yr. Since the recommendation are made on annual basis, as tea is a perennial crop, the short duration of the study was insufficient to draw firm conclusions.

Keywords: Zinc foliar application, Tea (*Camellia sinensis*), Yield, Leaf nutrient composition, Zinc concentration, Shoot growth