

Organic matter and nutrient status of some selected tea growing soils in the Matara District

B C Walpola* and S D Wanniarachchi

Department of Agricultural Chemistry, Faculty of Agriculture, University of Ruhuna, Kamburupitiya

Assessment of soil quality in tea lands is extremely important to investigate the nutrient status of such soils and make recommendations for sustainable land management practices. In this background, the present study was conducted to assess the organic matter and nutrient status of selected tea growing soils in the Matara District, Sri Lanka.

Representative soil samples (from 0 -15 cm depth) were drawn randomly from ten selected tea-growing fields and analyzed for N, P, K and organic matter contents using standard methods. A forest with the same soil type was used as the reference site to compare the cultivated and undisturbed soils.

Results revealed that the average nutrient contents of tea growing soils were 0.18 %, 200 mg/kg of soil and 112 mg/kg of soil for N, P and K, respectively, whereas the corresponding figures for the forest soil were 0.17 %, 65 mg/kg of soil and 30 mg/kg of soil. The average organic matter contents were 1.6 and 2.5 %, for tea soils and reference forest soil respectively. Continuous usage of chemical fertilizers such as urea, rock phosphate and muriate of potash in tea cultivation could be the possible reason for the higher N, P and K values of tea growing soils over the forest soil. Furthermore, it could be seen that considerably low organic matter content in tea growing soils compared to forest soil could badly influence the sustainability of tea production. It is therefore, of paramount importance that the improvement of the organic matter status of tea soils by means of preventing soil erosion and sustaining or increasing soil organic matter levels by adding crop residues, compost and organic manures are done to ensure sustained productivity of tea growing lands.