

ASSESSMENT OF SOIL NUTRIENT STATUS IN DIFFERENT CROPPING SYSTEMS IN KALPITIYA REGION

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Availability and the usage of chemical fertilizers have been reduced drastically due to the current economic crisis of the country. As a result, farmers tend to apply a variety of organic manure and poor quality materials as substitutes for chemical fertilizers. Hence, a study was undertaken to find out the present status of soil fertility in farm allotments in Kalpitiya region where intensive farming is commonly practised. Soil samples were taken from different cropping systems namely vegetable fields (VF), horticultural fields (HF), tobacco fields (TF), and newly established fields with young coconut plants (CF). Sampling depth was 0-30 cm. Soil samples were analysed for chemical parameters using standard analytical methods. Significant differences ($p < 0.05$) were observed in soil EC, available P and exchangeable K among different cropping systems. In VF, HF, TF, and CF, the mean pH values were 6.7, 7.0, 6.9, and 6.9, respectively and EC values were 101, 53, 77, and 36 $\mu\text{S cm}^{-1}$, respectively. Mean organic matter content of VF, HF, TF, and CF were 0.9%, 0.8%, 0.8%, and 0.6%, respectively. Mean values of available P and exchangeable K in VF, HF, TF and CF were 4.5, 2.9, 3.3, 1.1 ppm and, 82.0, 44.7, 65.8, 39.3 ppm respectively. The sand percentage of all-sampling locations was above 90% indicating a sandy soil texture. Even though soil pH and EC levels in all locations were in favourable range, major nutrients, and OM content were far below the optimum level. Hence, introducing alternative measures to improve soil fertility is vital to maintain the sustainability of cropping systems in Kalpitiya area.

Keywords: Farming systems, Sandy regosols, Soil fertility parameters