

**SOIL FERTILITY ASSESSMENT IN NEWLY DEVELOPED LAND
BLOCKS UNDER LAND CONSOLIDATION PROJECT AT
NACHCHADUWA IRRIGATION SCHEME, ANURADHAPURA**

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A land consolidation project has been implemented by the Department of Irrigation at *Nachchaduwa* scheme with the objectives of making easy access for farm mechanization, improve water management efficiency and reducing cost of production. Since the project is at the latter stage, it has been decided to carry out a soil fertility survey for mapping existing soil parameters of land blocks before handing them over to land owners. As the first step of the survey, soil samples were collected randomly from 0-30 cm depth. The location of sampling points was also recorded using a handheld GPS receiver. Collected soil samples were analysed to determine soil chemical and physical parameters. Point sample values were interpolated to the study area using IDW technique in Arc GIS 10.4. Results revealed that soil pH varied from 6.3 to 10.1 indicating moderately acidic to strongly alkaline in nature. Soil EC values were within the range from 0.027 to 0.276 m Sm⁻¹ showing no potential for salinity development. The soil organic matter content was very low and it varied from 0.2% to 0.8%. Total N content was in the range of 0.007% to 0.089%. The available P and exchangeable K contents were within the range of 2.2 to 45.6 mg kg⁻¹ and 32–166 mg kg⁻¹ respectively. The soil texture was loamy sand to sandy loam. The bulk density varied from 1.5–1.8 g cm⁻³ indicating some what compacted nature of the topsoil. The results revealed that the necessity of enriching soil nutrient levels and organic matter content by supplementary sources. The prepared maps can be used as base material to develop site specific management plan for each and every land allotment.

Keywords: Interpolation techniques, Nutrient management, Soil analysis, Soil mapping, Soil sampling