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**Research** Article

## Soil quality assessment in black soils of Veppanthattai of Perambalur district, Tamil Nadu

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A detailed study on soil quality assessment in black soils of Veppanthattai of Perambalur district, Tamil Nadu was carried out with the objective to assess the available nutrients and their relationship with various physical, physiochemical properties and nutrients status in surface and subsurface soils. Soil samples were collected at a depth of 0-15cm and 15-30cm for analysis. The soils were moderately alkaline to strongly alkaline in reaction and non-saline in nature, low to medium in organic carbon and high in cation exchange capacity. The available N, P, K and S ranged from 120.0-235, 21.0-34.0, 120.0-268.0 kg ha<sup>-1</sup>, and 33.6-49.1 mg kg<sup>-1</sup>, respectively. The available Zn, Cu, Mn and Fe and B varied from 0.72-3.97, 0.84-1.71, 7.29-15.84, 2.06-7.45 and 1.47-2.37 mg kg<sup>-1</sup> in surface soils, respectively. The surface soils (0-15 cm) are low in available N, medium to high in available P, medium in available K and high in available S. Further, the soils were deficient in available Fe, deficient to sufficient in available Zn and Cu, high in available Mn and B in the surface samples. The pH had significantly positive correlation with EC and exchangeable Ca (r = 0.392\*\* and 0.240\*) and it was negatively correlated with organic carbon, N, P, S and Zn ( $r = -0.291^*$ ,  $-0.228^*$ , -0.304\*\*,-0.392\*\* and 0.345\*\*), respectively. The organic carbon had significantly positive correlation with available N. P, K, S, Zn, Cu, Mn, Fe and B (r = 0.796\*\*, 0.810\*\*, 0.575\*\*, 0.869\*\*, 0.663\*\*, 0.458\*\*,395\*\* 0.442\*\*, and 0.719\*\*) and it was significantly negative correlated with exchangeable Ca, Mg, Na, and CEC (r=-0.543\*\*, -0.241\*, -0.262\* and -0.372\*\*), respectively.

Key words : Black soil, Soil quality, Physical, physico-chemical properties, Available nutrients, Correlation

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