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Research Article

Soil quality assessment in red laterite soils of Chettinad of Sivaganga district of Tamil Nadu

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Summary

A detailed study on soil quality assessment in red laterite soils of Chettinadu, Sivaganaga 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 sub surface soils. Soil samples were collected at a depth of 0-15cm and 15-30cm and analyzed for available macronutrients and micronutrients. The available N, P, K and S ranged from 123.0-209, 14.0-28.0, 126.0-319.0 kg ha^{-1}, and 9.13-18.85 mg kg^{-1}, respectively. The available Zn, Cu, Mn and Fe and B varied from 0.10-3.52, 0.85-3.63, 24.02-49.21, 8.9-22.38 and 0.36-0.44mg kg^{-1} in surface soils, respectively. The available nutrient status indicates that the soils were low in N, low to medium in available P and medium to high in available K, S in the surface soils. The surface soils deficient in available Zn, sufficient in available Cu, Fe ,Mn and deficient in hot water soluble boron. The pH had significant positive correlation with EC, organic carbon and sulphur (r = 0.239*, 0.293* and 0.241*, respectively) and significantly negative correlated with $CaCO_3$ (r = - 0.302**). The pH had positive correlation but not significant with CEC, available P, Zn and Mn and negative correlation with available N, K, Fe and B.

Key words : Soil fertility, Nutrients availability, Physical, Physico chemical properties, Red laterite soils

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