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Geo-spatial distribution of Soil organic carbon status in banana growing tracts of Thoothukudi District, Tamil Nadu (India)

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Abstract

The study was undertaken with a view to assess the distribution Soil Organic Carbon (SOC) status with other soil chemical and physical parameters in banana growing tracts of Thoothukudi district of Tamil Nadu. In this the task of assessing the SOC status, related physico - chemical properties, the study was carried out with the major objectives of geospatial distribution and preparation of thematic maps. Totally, 238 geo-referenced soil samples covering the entire five blocks of banana growing tracts of Thoothukudi district were collected randomly at three different depths of 0-15, 15-30 and 30-45 cm by adopting the standard procedures of soil sample collection. The GPS data (Latitude ºN and Longitude ºE) of located soil sampling sites distributed over the entire banana growing tracts of the district were recorded from Garmin GPS 76CS model instrument.

The result of the present study shows that the organic carbon content varied from low to high (0.26-0.87 per cent) status at 0-15 cm depth of soil. It decreased low to medium (0.04 -0.65 per cent) at 15 - 30 cm and low (0.01- 0.34 per cent) at 30-45 cm depth of soil respectively. The study thus clearly indicates that, the distribution of SOC was found to be low in Alwarthirunagari block was recorded 24, 93.8 and 100 per cent at 0-15, 15-30 and 30-45 cm depth of soil respectively. Karungulam block was recorded 20.4, 97.9 and 100 per cent at 0-15, 15-30 and 30-45 cm depth of soil respectively. Srivaikundam block was recorded 8.16, 91.8 and 100 per cent at 0-15, 15-30 and 30-45 cm depth of soil, respectively. Tiruchendur block was recorded 34.6, 97.9 and 100 per cent at 0-15, 15-30 and 30-45 cm depth of soil, respectively. Thoothukudi block was recorded 35.7, 100 and 100 per cent at 0-15, 15-30 and 30-45 cm depth of soil respectively.The overall data on distribution of SOC status of banana growing tracts of Thoothukudi district suggest that soils are medium distribution of SOC at surface soil. As the soil depth increases, the distribution of SOC decreases. Thus the above investigation of findings out the geo spatial distribution of SOC status will provide valuable information towards sustainable banana farming with the interaction of residue management in Thoothukudi district (India).

Biography

Selvaraj Shanmugaraj completed his Ph.D. degree in Soil Science and Agrl. Chemistry in University of Agrl. Sciences, Dharwad, Karnataka (India).Presently he is working as SRF in TNAU, Coimbatore, Tamil Nadu, India.