

Characterization, Classification and Crop Suitability of Black Cotton Soils of Southern Tamil Nadu

M Paramasivan and D Jawahar

Agricultural Research Station, Kovilpatti –628 501, Tamil Nadu

ABSTRACT

The study area is located at 9° 16' of North latitude and 77° 92' of East longitude with an altitude of 90 m above mean sea level (MSL) in Tuticorin district of Tamil Nadu. The surface soil colour ranged from very dark grayish brown (10 YR 3/2) to very dark gray (10 YR 3/1). The soil reaction ranged from moderately alkaline to very strongly alkaline in surface and sub surface soils. Organic carbon content of the surface soils was low, ranging from 0.31 to 0.37 g kg⁻¹. Cation exchange capacity (CEC) of the surface soils was high, ranging from 47.7 to 51.5 cmol(p⁺)kg⁻¹. These soils were low in available nitrogen and phosphorus and high in available potassium. The DTPA–Cu, Fe and Mn were generally well above the critical limits whereas, DTPA-Zn was deficient in all soils. The soil were classified as Typic Haplusterts. As per land capability classifications, these soils were classified as IIIs and IIIes and require soil conservation measures for suitable crop cultivation. The soils were moderately suitable (S2) for sorghum, cotton, sunflower and coriander. Some soils were marginally suitable for groundnut, coconut, ber and citrus.

Key words : Black cotton soil, Classification, Morphology, Physical and chemical properties.