



RESEARCH ARTICLE :

Genesis, classification and evaluation of some sugarcane growing black soils in semi arid tropical region of Telangana

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SUMMARY : The morphological, physical and physico-chemical characteristics of some sugarcane growing black soils of Medak district of Telangana State have been studied for proper appraisal of their productivity potential and their rational use. The soils were formed at nearly level and plain topography on granitic gneiss parent material mixed with calcareous murrum. The soils are deep to very deep. The textural class of fine earth fraction was clay loam and clayey and had angular blocky structure. The colour varied from very dark grayish brown (10 YR3/2) to dark yellowish brown (10YR 4/4) under dry condition. The clay content ranged from 38.7 to 71.4 per cent in surface and 37.2 to 76.2 per cent in subsurface horizons. The silt clay ratio was found to be less than 0.5 indicating the moderate weathering. The soil pH was neutral to strongly alkaline in range (6.5 to 9.2) and non saline in nature. The organic carbon content was medium to high (4.3 to 8.4 g kg⁻¹) in surface horizons. The soils are moderately calcareous with CaCO₃ ranges from 1.3 to 7.8 per cent with high in cation exchange capacity. The exchangeable bases were in the order of Ca⁺² > Mg⁺² > Na⁺ > K⁺ on the exchange complex. The CEC / clay ratios soils were high (0.58 to 0.86). It indicates the presence of smectitic type of clay minerals. The soils have been classified as Typic Haplusterts and Vertic Haplustepts based on the morphological, physical, physico-chemical, and chemical properties. The study area classified into 'III swef' land capability sub-class due to the limitations of drainage, texture, erosion and soil fertility limitations. The soils were moderately suitable to highly suitable for cultivation of sugarcane.

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