

Cracking Clay Soils of Middle Indo-Gangetic Plains of Bihar, India: Characteristics and Mineralogy

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Abstract: *Three typical pedons representing the undulating upland and old alluvial plain of Aurangabad district, Bihar under middle Indo-Gangetic plain were undertaken for this study. The soils were very deep, well to moderately well drained, dark grayish brown to light olive brown in colour and silty clay loam to silty clay in texture. Soils were slightly acidic to slightly alkaline in reaction (pH 6.2 to 8.4), medium to high in organic carbon (6.3 to 12.0 g kg⁻¹), medium in CEC [16.5 to 22.0 c mol (p⁺)kg⁻¹] with medium to high in base saturation (62 to 88%). The soils developed deep and wide cracks which resembled to Vertisols / Vertic properties found in other parts of the country with respect to texture, periodic opening and closing of cracks in the subsurface but have dissimilarity with respect to slickenside development, wedge shaped structure and colour. XRD studies indicated that the presence of sufficient amount of smectite and kaolinite-smectite interstratified clay minerals in these soils are responsible for shrink-swell character of the soils.*

Keywords: *Aurangabad district soils; Clay mineralogy – Bihar; Soils – Bihar; Vertisols.*