

Research Article

Characterization of some vertisols of drought prone zone of Marathwada region

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Received : 16.04.2014; Revised : 18.05.2014; Accepted : 28.05.2014

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Summary

The study on characterization of some Vertisols of drought prone zone of Marathwada region (M.S., India) was studied during 2011-12. The profile of five soil sites on different topographic condition were chosen at Osmanabad, Latur and Beed Disticts of Marathwada region. These soil sites were examined for soil site properties such as climate, depth, texture, structure and drainage. Physio-chemical properties such as pH, EC, organic carbon, CEC, CaCO₃ content, available micronutrient content, bulk density, Hydraulic conductivity, sand, silt, clay were also studied which are the major factors for a successful crop production. Morphological analysis showed that surface structure was weak and sub surface was sub angular to angular blocky. Soil colour showed dark grayish brown to very dark gray colour. Drainage was moderately well of all soils except P₃ and P₅ which were Imperfect drained respectively. Soils were clayey in texture and clay per cent ranged from 50.1 to 58.9 per cent. Sand per cent ranged from 10.1 to 21.6 per cent and silt per cent varied from 25.1 to 32.9. Bulk density ranged from 1.27 to 1.53 Mg m⁻³ Hydraulic conductivity ranged from 0.10 to 5.3 cm hr⁻¹. pH range showed that soils were moderately to strongly alkaline in reaction. Organic carbon ranged from 0.29 to 1 per cent Calcum carbonate per cent ranged from 2.8 to 19.0 per cent. CEC ranged from 40.3 cmol (p⁺) kg⁻¹ to 78.2 cmol (p⁺) kg⁻¹. Based on field morphology and laboratory characterization, the soils of the study area belonged orders of Vertisols. The soils were classified as the qualified for great group Haplusterts. The soils were classified as Typic Haplusterts, at great group level. Soil profile when correlated with yield it was concluded that Typic Haplusterts (P₅) belonging to order Vertisol were best soils for cotton growing than other.

Key words : Classification, Soil site characteristics, Vertisols

How to cite this article : Malode, K.R. and Patil, V.D. (2014). Characterization of some vertisols of drought prone zone of Marathwada region. *Asian J. Soil Sci.*, 9(1): 137-141.