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RESEARCH ARTICLE :

Land use options and site suitability for sugarcane growing red soils, red laterite soils and black soils of Medak district of Telangana

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SUMMARY : A reconnaissance soil survey was undertaken in sugarcane growing soils of Medak district of Telangana to evaluate the soil suitability characteristics for developing the strong soil resource database for proper appraisal of their productivity potential and their rational use. This study was an embodiment with an objective of land use options and crop suitability of some sugarcane growing red soils, red laterite soils and black soils. Land capability classification was done based on the inherent soil characteristics, external land features and environmental factors. The red and red laterite soils of sugarcane cane growing area fall under one land capability class with three subclasses, *viz.*, 'III stef' and 'III tsdef' due to the limitations of slope, texture, soil depth, coarse fragments and soil fertility. The black soils fall under 'III swef' land capability sub-class due to the limitations of drainage, texture, erosion and soil fertility. Four fertility capability units were identified in the study area. The conditions modifiers identified in the study area were'd' dryness, 'v' high clay content, 'b' basic reaction, and 'h' acid but not Al-toxic. The condition modifier'd' dominated in its occurrence followed by the condition modifier 'h', 'v' and 'b'. The land evaluation for crop suitability indicated that the black soils were moderately suitable to highly suitable, red soils were marginally to moderately suitable and red laterite soils are marginally suitable for cultivation of sugarcane. Soil productivity can be improved by maintenance of enhanced soil fertility, addition of organic matter, proper drainage facilities, reduced sub surface crusting and erosion control practices.

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