

CHARACTERISTICS, CLASSIFICATION AND EVALUATION OF SOME SOILS IN TOSHKA, EGYPT

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ABSTRACT:

Ten profiles were selected from the southern part of Toshka to study the characteristics, classification and evaluation of these soils. This study is needed for proper planning of reclamation and amelioration of these soils. The elevation of the studied area is between 184 to 193 m above sea level. The soils are almost flat, nearly level to gently sloping topography. They are moderately deep to deep with well drainage status. They have mainly sandy texture with common fine to coarse gravels and/or fragments. The main structure is weak fine granular to medium subangular blocky. The consistence is soft to hard when dry and friable when moist. The main hue notation of the soils has reddish color mainly between 2.5YR to 7.5YR. The soils are non saline having alkaline reaction. Total carbonate contents (CaCO₃) are mostly low having narrow ranges in profile layers. Organic matter (OM) content is low, decrease generally with depth. The cation exchange capacity (CEC) is mainly correlated with fine fractions and organic matter contents. The exchangeable cations are generally dominated by Na⁺ followed by Ca²⁺ then Mg²⁺ and few K⁺ making alkaline effect in the most of profiles layers. The morphological rating scale (RDH and RPD) indicates a slight distinctness between horizons which mainly attributed to the depositional pattern and /or regimes of soil materials more than development. The studied soils haven't any diagnostic horizons and therefore, they are classified as Entisols order up to family level. According to the land capability evaluation, the soils are categorized from II to V grades. Land suitability evaluation for growing major sixteen field, vegetable and fruit crops was achieved for the soils having grades from II to IV.

Key words: Toshka, characteristics, morphological rating scale, soil classification, land evaluation, capabilit