

Research Article

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Soil properties as influenced by use of water having variable salinity and sodicity

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Summary

A pot experiment was conducted during *summer* season of 2018 at Net House, Department of Agricultural Chemistry and Soil Science, College of Agriculture, Junagadh Agricultural University, Junagadh to study the influence of different levels of saline and sodic irrigation water on soil properties. The treatment consists of four levels each of salinity (2, 4, 6 and 8 dS m⁻¹) and sodicity (5.0, 10.0, 15.0 and 20.0 SAR) of irrigation water by adopting factorial CRD with three replications. The available macronutrients (N, P₂O₅ and K₂O) and organic carbon of soil after harvest of the crop were found maximum with EC-2 dS m⁻¹ and SAR-5.0 level of irrigation water. The water soluble and exchangeable Ca, Mg and Na and soil properties like EC_{2.5}, EC_e, pH_{2.5}, pH_s, CEC and ESP was found maximum with EC-8 dS m⁻¹ while water soluble and exchangeable K was found maximum with EC-2 dS m⁻¹. The water soluble and exchangeable Na was found maximum with SAR-20.0, whereas water soluble and exchangeable Ca, Mg and K were found minimum with SAR- 20.0. The soil properties like EC_e, pH_{2.5}, pH_s and ESP of the soil was found maximum with SAR- 20.0, but CEC was found maximum with SAR-5.0. The combined effect of saline and sodic irrigation water was found significant on available N and water soluble cations Ca⁺⁺, Mg⁺⁺, Na⁺, K⁺, exchangeable Na⁺, ESP, EC_e and pH_{2.5} of soil after harvest of groundnut.

Key words : Groundnut, Salinity, Sodicity, Available Macronutrients, Water soluble and Exchangeable cations and Soil properties

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