

Salt dynamics as influenced by different levels of drip and surface irrigation methods in the rhizosphere of vegetable crop under salt affected vertisols

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Received : 06.11.2013; Revised : 05.02.2014; Accepted : 18.02.2014

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■ **ABSTRACT** : A study was conducted at the Agricultural Research Station, Gangavathi, University of Agricultural Sciences, Gangavathi in northern Karnataka, India during *Rabi*/summer, 2007-'08 and 2008-'09 with beetroot (*Beta vulgaris*) as the test crop in saline vertisol. At all levels of irrigation under drip system, the soil pH around the dripper decreased considerably from initial as compared to the same at distances away from the dripper. The upper parts of the soil profiles showed low concentration of salts depending on the applied quantity of water. The higher irrigation regimes recorded the lower soil pH as compared to the lower irrigation regimes. The study indicated that salt content at particular distance from the point of application decreased with increase in depth of applied water and it increased with distance from the same. The drip irrigation scheduled at 1.2 ET resulted in the maximum tuber yields of 19.43 and 18.91 t ha⁻¹ during 2007-'08 and 2008-'09, respectively. Among the salinity levels, the highest tuber yield of 18.23 and 17.89 t ha⁻¹ were recorded in salinity level-I, respectively. Whereas, among the surface irrigation levels, irrigation at 1.2 ET recorded the highest tuber yields of 12.2 and 11.84 t ha⁻¹, respectively.

■ **KEY WORDS** : Drip, Surface irrigation, Vegetable, Beetroot, Soil salinity, Salt distribution, Soil pH

■ **HOW TO CITE THIS PAPER** : Balaganvi, Subhas, Ranghaswami, M.V. and Balakrishnan, P. (2014). Salt dynamics as influenced by different levels of drip and surface irrigation methods in the rhizosphere of vegetable crop under salt affected vertisols. *Internat. J. Agric. Engg.*, 7(1) : 93-99.