



## RESEARCH PAPER

# Effect of different irrigation methods on productivity of beetroot crop under saline vertisols

Subhas Balaganvi

Department of Agricultural Engineering College of Agriculture, University of Agricultural Sciences,  
Dharwad (Karnataka) India (Email: [malavika.m17@gmail.com](mailto:malavika.m17@gmail.com))

**Abstract :** A field study was conducted at the Agricultural Research Station, Gangavati in northern Karnataka during *Rabi*/summer, 2007-'08 and 2008-'09 to investigate the effects of drip and surface irrigation levels on the economic viability of growing beetroot crop under the salt-affected soils. The experiments were conducted in strip plot design with three soil salinity levels (EC - 1.3, 2.7 and 4.3 dS m<sup>-1</sup>) in main plots and five drip irrigation levels (0.6, 0.8, 1.0, 1.2 and 1.4 ET) and three surface irrigation levels (0.8, 1.0 and 1.2 ET) in sub plots with three replications. The total water used (500.1 and 557.8 mm ET during 2007-'08 and 2008-'09, respectively) was the highest in case of drip irrigation under 1.4 ET and the lowest (282.3 and 296.4 mm) was in case of 0.6 ET. Among the surface irrigation schedules, the highest (424.5 and 487.3 mm) water was used under the irrigation level of 1.2. The gross income was more in drip irrigation than surface irrigation. Among all the different irrigation levels, the maximum gross seasonal income, net returns and BC ratio were obtained in 1.2 ET with drip irrigation and the minimum in case of surface irrigation at 0.8 ET during both the years of study. The irrigation scheduled at 1.2 ET level was more profitable as compared to the other treatments in both the methods of irrigation. The magnitude of 4.5, 5.0 and 20.5 per cent increase in the BC ratio were noticed in case of drip irrigation level at 1.2 ET over that of surface irrigation respectively in salinity levels I, II and III during 2007-'08. Similar trend was observed during 2008-'09.

**Key Words :** Drip irrigation, Micro irrigation, Saline soils, Vegetables, Irrigation scheduling

**View Point Article :** Balaganvi, Subhas (2022). Effect of different irrigation methods on productivity of beetroot crop under saline vertisols. *Internat. J. agric. Sci.*, 18 (2) : 629-635, DOI:10.15740/HAS/IJAS/18.2/629-635. Copyright@ 2022: Hind Agri-Horticultural Society.

**Article History :** Received : 07.03.2022; Revised : 10.04.2022; Accepted : 12.05.2022