

Performance evaluation of gravity fed inline drip irrigation system

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■ **ABSTRACT** : The field experiment was under taken on research farm of College of Agriculture Engineering and Technology, Dapoli, dist.- Ratnagiri (M.S.) to evaluation the performance of gravity fed inline drip irrigation system for cashew plantation. The system used inline drippers having the average discharge of 0.6 lit/hr. The design was done for 1 ha. area. The sizes (diameter) of the main line, sub main, lateral was computed as 40 mm, 12 mm and 6 mm, respectively, which was found to be less as compared to the conventional drip irrigation system. The emission uniformity of gravity fed inline drip irrigation system was found to be 85 per cent and was good for tested emitters as per ASAE interpretation. The vertical and radial movement of moisture was observed upto 60, 46 cm for 6 hrs and 80, 50 cm for 12 hrs, respectively which showed that the movement of moisture contour was faster in 6 hrs. as compared to 12 hrs. The moisture distribution pattern in gravel sandy loam lateritic soils showed that, the vertical movement of water was predominant than the lateral movement. The gravity fed inline drip irrigation system was found to be beneficial to small and marginal farmers of Konkan region of Maharashtra to provide the irrigation in remote areas.

■ **KEY WORDS** : Gravity fed drip irrigation, Design, Moisture distribution, Cost

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