

Evaluation of drip and surface irrigation methods for banana in Dharwad district of Northern Karnataka

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ABSTRACT : The study was conducted on drip and surface irrigation banana in Dharwad district of Northern Karnataka to know the performance of banana under surface and drip irrigation methods revealed that, the increase in application efficiency in drip irrigation over surface method of irrigation was in the range of 12.13 to 14.24, 14.33 to 15.64 and 12.28 to 17.17 per cent in small, medium and large farmers, respectively. The increase in distribution efficiency in drip irrigation over surface method of irrigation was in the range of 11.27 to 13.42, 13.37 to 15.08 and 13.56 to 15.91 per cent in small, medium and large farmers, respectively. The water saved in drip irrigation over surface method of irrigation was in the range of 44.46 to 47.95, 40.28 to 44.80 and 42.83 to 48.08 per cent in small, medium and large farmers, respectively. The increase in banana fruit yield in drip irrigation over surface method of irrigation was in the range of 25.73 to 31.53, 26.14 to 34.97 and 26.78 to 36.91 per cent in small, medium and large farmers, respectively.

KEY WORDS : Drip irrigation, Surface irrigation, Application efficiency, Distribution efficiency

Article Chronicle : Received : 04.07.2012; Revised : 15.09.2012; Accepted : 05.10.2012

How to cite this Article : Meti, C.B. (2012). Evaluation of drip and surface irrigation methods for banana in Dharwad district of Northern Karnataka. *Engg. & Tech. in India*, 3(2) : 107-110.

INTRODUCTION

India has made a appreciable progress in creating irrigation potential. However, it is still insufficient to meet the long term requirement of irrigation. The ever increasing population has put tremendous pressure on food demand. Every unit of available land resource and other critical inputs needs to be exploited to reap maximum benefits. In future, the most critical input happens to be water, which has become scarce. In an effort to make irrigation more efficient to obtain more crop per drop, farmers have adopted alternatives to flooding and other conventional irrigation methods. Among all the irrigation methods drip irrigation is an efficient method to provide irrigation water directly into the soil at the root zone of plants and it permits the irrigator to limit the watering closely to the crop water requirements.

EXPERIMENTAL PROCEDURE

The study was conducted during the year 2010-11 and

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2011-12 in Dharwad district of Northern Karnataka and among the five Taluks of Dharwad district, three Taluks namely Dharwad, Hubli and Khalghatagi were purposively selected based on the highest area under drip irrigation. The village wise list of drip irrigation farmers was obtained from the Deputy Director of Horticulture, Dharwad district. The revenue villages were arranged in descending order based on the drip area and top ten villages in each taluka were selected. The selection of the farmers was made on the basis of major crops, holding size and year of plantation. The study was restricted to those crops which are in normal yielding stage, accordingly banana was the only crop and hence, it, was selected for the study. The seventy five per cent of the farmers who have installed drip irrigation system for banana, planted during 2009-10 amounting to eighty eight were selected from the Dharwad, Hubli and Khalghatagi Taluks of Dharwad district by following proportionate random sampling technique. The corresponding number of farmers with all criteria except drip irrigation were selected randomly from surface irrigation farmers. Two terms that describes the performance of the drip and surface irrigation are water application efficiency and water distribution efficiency. Quantity of water applied was measured with 1000