

Effect of irrigation levels on vegetative growth and yield characteristics in white onion (*Allium cepa* L.) in Konkan region

■ M.S. MANE, G.G. KADAM AND S.T. PATIL

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See end of the Paper for authors' affiliation

Correspondence to :

M.S. MANE

Department of Irrigation and Drainage Engineering, College of Agricultural Engineering and Technology, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, RATNAGIRI (M.S.) INDIA

■ **ABSTRACT** : An experiment was conducted at College of Agricultural Engineering and Technology, Dapoli to assess the effect of irrigation levels on vegetative growth and yield characteristics in white onion on micro-irrigation system. In the present investigation white onion variety Alibag local was tested under three irrigation levels namely I_1 (no deficit), I_2 (20% deficit) and I_3 (40% deficit) on mini-sprinkler (M_1) and micro-sprinkler (M_2) irrigation methods, while the conventional check basin method was taken as control. The maximum average yield was attained in irrigation level I_1 as 39.82 t/ha, while the minimum average yield of 24.97 t/ha was recorded for irrigation level I_3 . The maximum yield of 42.37 t/ha was recorded for treatment combination M_2I_1 followed by treatment combinations M_1I_1 (37.26 t/ha) and M_2I_2 (36.03 t/ha). In control treatment the yield of 17.52 t/ha was recorded. The maximum water use efficiency 14.51 q/ha-cm was reported in treatment combination M_2I_1 and the minimum water use was found 10.98 q/ha-cm in treatment combination M_1I_3 . The fertilizer use efficiency followed the same trend. The maximum fertilizer use efficiency 176.12 was recorded in treatment combination M_2I_1 and minimum 99.54 was obtained in treatment combination M_1I_3 . In control fertilizer use efficiency was 73.01, which was lowest amongst all treatments.

■ **KEY WORDS** : Deficit irrigation, White onion, Mini-sprinklers, Micro-sprinklers

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