

Study of white onion (*Allium cepa* L.) on yield and economics under pulse irrigation (drip) for different irrigation levels

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Received : 21.10.2017; Revised : 19.02.2018; Accepted : 28.02.2018

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■ **ABSTRACT** : The field experiment was conducted during two *Rabi* seasons from 12th November, 2014 to 26th April, 2015 and 23rd November, 2015 to 4th May 2016, on sandy clay loam soil at Instructional Farm of Department of Irrigation and Drainage Engineering, College of Agricultural Engineering and Technology, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, India (latitude 17° 45' N and longitude 73° 10' E and altitude of 250 m). The experiment was arranged in twelve treatment combinations with strip plot design as horizontal factor (main treatment) one continuous irrigation (P₁), two pulses (P₂), three pulses (P₃) and four pulses (P₄), while vertical factor (sub treatment) as irrigation levels *viz.*, I₁ (0.80 ET_c), I₂ (1.0 ET_c) and I₃ (1.20 ET_c) treatments. It was revealed that the average seasonal water applied to white onion under pulse irrigation (drip) through different irrigation levels varied from 276.8 mm for I₁ (0.8 ET_c) to 429.0 mm for I₃ (1.2 ET_c) irrigation levels. Among the different treatment combination I₂P₄ (irrigation level I₂ (1.0 ET_c) with four pulse treatment P₄) was found 38.52 t.ha⁻¹ and significantly superior over I₁P₁ (irrigation level I₁ (0.8 ET_c) with continuous irrigation P₁). The production cost of Rs. 4,47,366 and Rs. 4,42,962 ha⁻¹, gross returns of Rs. 9,63,000 and Rs. 9,31,500 ha⁻¹, net returns of Rs. 5,15,634 and Rs. 4,88,538 ha⁻¹ and B C ratio of 2.15 and 2.10, were observed for I₂P₄ and I₃P₄ treatment combinations, respectively. Average water use efficiency was found maximum for I₁P₄ (11.93 q ha⁻¹ cm⁻¹) treatment combination followed by I₁P₃ (11.33 q ha⁻¹ cm⁻¹) and I₂P₄ (10.99 q ha⁻¹ cm⁻¹) treatment combinations, respectively.

■ **KEY WORDS** : Pulse irrigation (drip), Irrigation scheduling, Water use efficiency, White onion, Cost of production, Net returns, B : C ratio

■ **HOW TO CITE THIS PAPER** : Madane, D.A., Mane, M.S., Kadam, U.S. and Thokal, R.T. (2018). Study of white onion (*Allium cepa* L.) on yield and economics under pulse irrigation (drip) for different irrigation levels. *Internat. J. Agric. Engg.*, **11**(1) : 128-134, DOI: 10.15740/HAS/IJAE/11.1/128-134.