

Yield response and economic feasibility of cauliflower under drip irrigation

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ABSTRACT : The experiment was conducted during the year 2008-09 in *Rabi* season at department of Irrigation and Drainage Engineering, Marathwada Krishi Vidyapeeth, Parbhani. The experimental plot was 3.6 m wide and 4.8 m long. The statistical split plot design was used. The treatments constituted the combination of three irrigation levels and three fertilizer levels with two replication. The climatological approach *i.e.* pan evaporation (PE) is one of the irrigation scheduling criteria. The treatments were a) Main treatments I_1 – Irrigation of 0.4 PE by drip, I_2 – Irrigation of 0.6 PE by drip, I_3 – Irrigation of 0.8 PE by drip, b) Sub treatments F_1 – 50 per cent RDF, F_2 – 75 per cent RDF, F_3 – 100 per cent RDF, c) Control: I_4 – Surface irrigation at $IW/CPE = 1.2$. Irrigation applied at I_3 (0.8 PE) level recorded significantly higher yield than other irrigation levels. I_3F_3 (0.8PE with 100% RDF) was significantly superior for yield of cauliflower crop (variety- Hunsna) which was 187.07 q/ha for drip irrigation and 157.61q/ha for surface irrigation. Drip irrigation system recorded higher water use efficiency than surface irrigation method. It was also observed that the benefit cost ratio of drip irrigation system (1.88) was higher than surface irrigation method (1.62).

Key words : Cauliflower, Yield, Fertilizer, Drip irrigation, Economics

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INTRODUCTION

The importance of vegetables in human nutrition is well known, vegetable are rich and comparatively cheaper source of vitamin and minerals. Their consumption in sufficient amount provides vitamin, minerals, proteins, carbohydrates and fibers in the diet besides having medicinal value and provides nutritional security. Among the vegetables, cauliflower (*Brassica oleracea* L.) has got more importance and popularity in various parts of the world. It is liked due to its white, tender head or curd formed by the shortened flower parts, which is useful in various ways due to its attractive appearance, good taste and rich nutritive content. Efforts have been made to increase the vegetable production by developing number of high yielding, quality, and disease resistant varieties with higher

and better production technologies. There is a need to achieve over a target to meet the requirement of large population of the country. The Indian farmers need to be trained to adopt modern technology in which water management plays a key role. The yield of cauliflower can be increased by adopting improved irrigation, fertilizer and cultural practices. Among improved irrigation and fertigation practices, application of manures and fertilizer through drip irrigation system play an important role to increase the yield of crop. Cost estimation for cultivation of any crop under drip irrigation plays vital role in adoption of drip irrigation. With these considerations in view, the present experiment entitled yield response cauliflower crop under drip irrigation was planned during winter (*Rabi*) season at department of Irrigation and Drainage Engineering Marathwada Krishi Vidyapeeth, Parbhani with objectives to determine appropriate irrigation scheduling for cauliflower under drip irrigation and to study the economic feasibility of drip irrigation system for cauliflower crop.

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EXPERIMENTAL PROCEDURE

The experiment was conducted during the year 2008-2009