



**RESEARCH ARTICLE :**

## Response of capsicum to different irrigation schedules under protected and open cultivation

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Protected cultivation, Drip irrigation, Plastic Mulch, WUE, Crop yield

**SUMMARY :** The experiment was conducted during late *Rabi* season (December to May) in year 2013-14, at trial cum demonstration field of Precision Farming Development Centre, Central Institute of Agricultural Engineering, Bhopal (M.P.) to check response of capsicum to different irrigation schedules under protected and open cultivation. The treatment comprising of three growing environments *viz.*, naturally ventilated polyhouse, shadehouse and open field and three irrigation levels at 100% ET<sub>c</sub>, 80% ET<sub>c</sub> and 60% ET<sub>c</sub> in Factorial Randomized Block Design with nine treatment combinations and three replications. The study revealed that under polyhouse the crop yield was increased over open field cultivation along with water saving in covered cultivation. In case of vegetative character like plant height, number of leaves per plant and Spad value which depicts chlorophyll content in plant, reproductive parameters like number of flowers and fruits per plant, was maximum under naturally ventilated polyhouse followed by shadehouse and then open field at all growth stages. Days taken for flower initiation and fruit set were significantly lower in naturally ventilated polyhouse followed by shadehouse then open field. Higher yield with minimum crop water requirement gives maximum water use efficiency which is observed in treatment T<sub>9</sub> (drip irrigation at 60% ET<sub>c</sub> under polyhouse) *i.e.* 30.29 q/ha-cm. However, minimum water use efficiency was noticed in treatment T<sub>4</sub> (drip irrigation at 100% ET<sub>c</sub> under shadehouse) *i.e.* 12.25 q/ha-cm although it having higher yield than open field but also it required maximum consumptive use. The significantly superior yield was recorded under the growing condition C<sub>3</sub> *i.e.* polyhouse and irrigation level I<sub>3</sub> *i.e.* drip irrigation at 60% ET<sub>c</sub>, whereas in treatment combination I<sub>3</sub>C<sub>3</sub> (drip irrigation at 60% ET<sub>c</sub> under polyhouse) are found significantly superior yield (1163.7 q/ha) over rest combination.

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