



Comparative study on Crop Water Requirement Using CROPWAT Model for Different Vegetable Crops Grown Under Protected and Open Field Cultivation

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Abstract: The result revealed that the values of average daily reference evapotranspiration (ETo) under polyhouse were found less than, values of ETo under open field for all months. It is because of the green-house effect and the low radiation. The values of ET_o during both seasons were lower under polyhouse cultivation compared to open field condition. The estimated results, related to total crop water requirement indicates that significant irrigation water saving occurs through cultivation of vegetable crops under polyhouse as compared to open field cultivation. The operating time of drip under polyhouse was less than open field cultivation for all vegetable crop which, results reduction in electricity consumption for irrigating the vegetable crop. It also found that all vegetable crops requires approximately 27% less water under polyhouse cultivation comparing to total water required under open field cultivation. The polyhouse cultivation technique enhance water saving and reduction in electricity consumed, for climatic condition of Udaipur.

Keywords: Evapotranspiration, Protected cultivation, Water saving, Irrigation scheduling, Crop water requirement
