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Designing of drip irrigation and fertigation scheduling in bitter gourd (*Momordica charantia*) crop

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■ **ABSTRACT :** The study was conducted in an area of 7 ha at ACF Farm in the village- Achhoti, dist. - Durg (C.G.) during 2012. Drip irrigation provides the ultimate water use efficiency for open field agriculture, often resulting water savings of 25-50 per cent compared to flood irrigation. The Irrigation scheduling was done for calculating the water requirement of crop at different stage of the crop. It was calculated by calculating the crop factor, canopy factor at different stage of crop and weekly evaporation data collecting from evaporation pan of metrological department at I.G.K.V. Raipur. The water requirement of the bitter gourd varied from 42.833 – 127.48 cu.m/ha/day during the period of establishment of plant to flowering and harvesting. Fertigation is a most important part of drip irrigation system by which the most advanced and efficient practices of fertilization were done. Fertigation enables the farmers to apply optimum quantity and right combination of fertilizer nutrient mixed in water uniformly throughout the irrigated area according to the crop development phases. The availability of nutrients is influenced by the pH, moisture and quality and quantity of plants. The fertigation scheduling gives idea about proper supply of fertilizer at calculated quantity to plants. Drip irrigation is most advanced method of irrigation, applied the small amount of water to the crop through the drippers placed above the soil surface. A properly designed drip irrigation system has advantage over other method of irrigation to help growers of fruits, vegetable, flowers and other cash crops by saving water, increasing yield, improving quality of produce, reducing labour cost, reducing salt concentration in the root zone, permitting use in greenhouse, controlling and reducing diseases. It minimizes conventional losses such as deep percolation, runoff and soil water evaporation.

■ **KEY WORDS :** Drip irrigation, Irrigation scheduling, Design of drip irrigation

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