

## EFFECT OF FERTIGATION SCHEDULING AND COST ECONOMICS IN THREE CULTIVARS OF GUAVA (*PSIDIUM GUAJAVA* L.) UNDER ULTRA HIGH DENSITY PLANTING IN CHHATTISGARH

Puneshwer Singh Paikra\*, G.D. Sahu and Nisha Chandel

Department of Horticulture,  
Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) -492012, India  
Email: [puneshwersinghpaikra@gmail.com](mailto:puneshwersinghpaikra@gmail.com)

Received-01.07.2016, Revised-20.07.2016

**Abstract:** Field experiment was carried out during the year 2014-15 in winter season at research field of Precision Farming Development Centre (PFDC) of Department of Horticulture, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) to study the effect of drip irrigation and fertigation scheduling on performance of three cultivar of guava (*Psidium guajava* L.) in ultra high density planting. The experiment was conducted with three varieties (Lalit, Allahabad Safeda and L-49) along with three levels of fertigation scheduling (60% RDF, 80% RDF and 100% RDF). The benefit-cost (B: C) ratio was evaluated. Benefit-cost analysis was carried out to determine the economic feasibility of using drip irrigation. The cost of drip irrigation system includes depreciation, prevailing bank interest rate, repair and maintenance of the system. The interest rate and repair and maintenance cost of the system were 12 and 1% per annum of the fixed cost respectively. The useful life of drip system was considered to be 10 years. The cost of cultivation includes expenses incurred in field preparation, cost of seedlings, fertilizer, weeding, crop protection measures, irrigation water and harvesting with labour charges. The B: C ratio was found maximum (2.78) in Lalit cultivar with (80% RDF).

**Keywords:** Fertigation, Guava, UHDP, B: C ratio

### REFERENCES

- Adsule, R.N. and Kadam, S.S. (1995).** In Handbook of Fruit Science and Technology- Production, Composition, Storage and Processing (Eds. D.K. Salunkhe and S.S. Kadam), Marcel Dekker Inc., New York, 419-433.
- Agrawal, N. and Agrawal, S. (2007).** Effect of different levels of drip irrigation on the growth and yield of pomegranate under Chhattisgarh region. *Orissa. J. Hort.*, 35: 38-46.
- Anonymous. (2013).** Krishi Darshika, Directorate of Horticulture, State Govt., Chhattisgarh. 19.
- Bangar, A. R. and Chaudhary, B. C. (2004).** Nutrient mobility in soil, uptake, quality and yield of Suru sugarcane as influenced by drip fertigation in medium vertisols. *J. Indian Soc. Soil Sci.*, 52 (2): 164-171.
- Bharambe, P.R., Mungal, M. S., Shelke, D. K., Oza, S. R., Vaishnav, V.G. and Sondge, V.D. (2001).** Effect of soil moisture regimes with drip on spatial distribution of moisture, salts, nutrient availability and water use efficiency of banana. *J. Ind. Soc. Soil Sci.*, 49: 658-665.
- Chandra, A. and Jindal, P.C. (2001).** Sustainable fruit production in arid regions for export. *Curr. agric.*, 25: 13-16.
- Doorenbos, J. and Pruitt, W.O. (1977).** Guidelines for predicting crop requirements. Irrigation and Drainage paper No. 24 (Revised) FAO, Rome.
- Kumar, A., Singh, R.K., Sinha, A.K., Singh, H.K. and Mishra, A.P. (2007).** Effect of fertigation on banana through drip irrigation in North Bihar. *J. Res. Birsa Agric. Univ.*, 19: 81-86.
- Maji, S. and Das, B.C. (2008).** Effect of organic and inorganic mulches on vegetative growth and yield of guava (*Psidium guajava* L.). *Environment and Ecology*, 26(3A): 1292-1293.
- Panse, V.G. and Sukhatme, (1985).** Statistical methods for agricultural workers. ICAR, New Delhi.
- Raina, J. N., Thakur, B. C. and Verma, M. L. (1999).** Effect of drip irrigation and polythene mulch on yield, quality and water use efficiency of tomato (*Lycopersicon esculentum*). *Indian J. agric. Sci.*, 69 (6): 430-433.
- Raina, J.N., Sharma, T. and Suman, S. (2011).** Effect of drip fertigation with different fertilizers on nutrient distribution in soil, leaf nutrient content and yield of apricot (*Prunus aremeniaca* L.). *J. Indian Soc. Soil Sci.*, 59: 268-277.
- Ram, R.A. and Rajput, M.S. (2000).** Effect of frequent winter rains on fruit quality of two commercial cultivars of guava (*Psidium guajava* L.). *Annals of agric. Research*, 21(3): 369-373.
- Rumpel, J., Kaniszewski, S. and Dysko, J. (2003).** Effect of drip irrigation and fertilization timing on yield of onion. *J. Vegetable Crop Production*, 9(2): 65-73.
- Salvin, S., Baruah, K. and Bordoloi, S.K. (2000).** Drip irrigation studies in banana cv. Barjahaji (*Musa* AAA group, *Cavendish* sub-group). *Crop Res.*, 20: 489-493.
- Shirgure, P.S., Srivastava, A.K. and Singh, S. (2004).** Growth, yield and quality of acid lime under pan evaporation based drip irrigation scheduling. *Ind. J. Soil Conserv.*, 32: 32-35.
- Shukla, A.K., Pathak, R.K., Tiwari, R.P. and Nath, V. (2001).** Influence of irrigation and

\*Corresponding Author

mulching on plant growth and leaf nutrient status of aonla (*Emblica officinalis* G.) under sodic soil. *J. Appl. Hort.*, 2: 37-38.

**Singh, P., Singh, A.K. and Sahu, K. (2006).** Irrigation and fertigation of pomegranate cv. Ganesh in Chhattisgarh. *Ind. J. Hort.*, 63: 148-151.

**Singh, R. M., Bhandarkar, D. M., Singh, D. K., Reddy, K. S. Rao, K.V.R. and Mathankar, S.K.**

**(2012).** Techno economic feasibility of drip fertigation in guava (*Psidium guajava* L.). *Environment and Ecology*, 30(2): 271-274.

**Sulochanamma, B.N., Reddy, T.Y. and Reddy, G.S. (2005).** Effect of basin and drip irrigation on growth, yield and water use efficiency in pomegranate cv. Ganesh. *Acta Horticulturae*, 696: 277-279.