



Quantitative and qualitative enhancement in guava (*Psidium guajava* L.) cv. CHITTIDAR through foliar feeding

RAKESH KUMAR, RAJESH TIWARI* AND B.R. KUMAWAT

Department of Fruit Science, (R.V.S.K.V.V., Gwalior), College of Horticulture, MANDSAUR (M.P.) INDIA
(Email : rt_jnkvv@yahoo.com)

Abstract : The present experiment was conducted at the Department of Fruit Science, K.N.K. College of Horticulture, Mandasaur (M.P.) on six years old guava tree cv. Chittidar during 2011-2012. On the basis of results obtained in present investigation it is concluded that foliar spray of $ZnSO_4$ 0.8% + borax 0.4% + NAA 50 ppm + GA_3 100 ppm was found best to increase fruit set, fruit retention, volume of fruit, pulp thickness, pulp weight, pulp per cent, length and diameter of fruit at harvest, average fruit weight, and reduced the seed per cent and seed pulp ratio which ultimately increased the yield per tree. Various quality parameters total sugars, reducing sugars, non reducing sugars, TSS, zinc and iron content in fruit pulp were also improved with application of $ZnSO_4$ 0.8% + borax 0.4% + NAA 50 ppm + GA_3 100 ppm. Same treatment also recorded reduced fruit drop, minimum number of seeds per fruit, maximum TSS/acid ratio and minimum acidity per cent of fruit.

Key Words : Guava, Foliar feeding, Growth regulators, Micro-nutrients

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INTRODUCTION

Guava (*Psidium guajava* L.) is one of the most popular fruit grown in tropical and sub-tropical regions of India, which belongs to the family Myrtaceae. This fruit is a native of tropical America and extensively grown in South Asian countries. Zinc is the important constituent of several enzymes systems which regulate various metabolic reactions in the plant. Zinc is essential for auxin and protein synthesis, seed production and proper maturity. Boron is a constituent of cell membrane and essential for cell division. It acts as a regulator of potassium /calcium ratio in the plant, helps in nitrogen absorption and translocation of sugar in plant. The application of GA_3 improves the size, shape and weight of the fruits. GA_3 increases fruit set and fruit retention of the tree. By the application of NAA, T.S.S. and ascorbic- acid content of fruits are increased and acidity is reduced.

NAA reduces the number of seed of the fruits. It also induces heavier fruiting and promotes flowering. In subtropical climate, three distinct periods of flowering and fruiting in the

guava. These three distinct periods are, Ambe bahar- February to March flowering and fruit ripens in July- August. Mrig bahar- June to July flowering and fruit ripens October to December and Hasta bahar- October to November flowering and fruit ripens in February to April (Shukla *et al.*, 2008).

The quality of guava fruit is greatly affected by temperature and humidity, because of these facts the fruit quality of winter season is far better than rainy season. High temperature during summer coupled with low humidity has been reported to reduce fruit set and increase fruit drop. The foliar application of nutrients and growth regulators play vital role in improving the quality and comparatively more effective for rapid recovery of plants. The foliar feeding of fruit tree has gained much importance in recent years, as nutrients applied through soil are needed in higher quantity because some amount leaches down and some become unavailable to the plant due to complex soil reactions. The yield parameter like average fruit weight, number of fruits per tree and yield per tree are increased by the spray with micronutrients. Through the application of plant growth regulators the physical (size, diameter and shape), chemical

* Author for correspondence