



Research Paper

Article history :

Received : 19.07.2012

Revised : 23.10.2012

Accepted : 23.11.2012

Quantitative and qualitative enhancement in guava cv. L-49 by the application of NPK fertilizers under Malwa plateau conditions of Madhya Pradesh

■ VIJESH KUMAR SHARMA¹, RAJESH TIWARI AND B.S. GUPTA²

Members of the Research Forum

Associated Authors:

¹Department of Fruit Science,
College of Horticulture,
MANDSAUR (M.P.) INDIA

²Department of Extension
Education, College of Horticulture,
MANDSAUR (M.P.) INDIA

Author for correspondence :

RAJESH TIWARI

Department of Fruit Science, College
of Horticulture, MANDSAUR (M.P.)
INDIA

ABSTRACT : The results obtained from the present investigation show that the individual application of nitrogen, phosphorus and potassium and their interactions significantly influenced the physico-chemical properties of guava cv. L-49. Treatments with higher doses of nitrogen were found very effective to improve the physico-chemical parameters of guava fruit. The maximum fruit diameter (8.11 cm) was recorded by combined application of 600 g N, 400 g P₂O₅ and 600 g K₂O per tree followed by combination of 600 g N, 400 g P₂O₅ and 300 g K₂O per tree and maximum fruit length (7.63 cm) was recorded by combined application of 600 g N, 400 g P₂O₅ and 0 g K₂O. The maximum volume of fruit, pulp weight and pulp percentage were recorded in N₂P₂K₁. The maximum total soluble solids (12.00 °Brix) were recorded in combined application of 600 g N, 400 g P₂O₅ and 300 g K₂O per tree. The maximum total sugars (9.187%), non-reducing sugar (4.870%) were recorded in N₀P₂K₂ and maximum reducing sugar (4.947%) was recorded in N₁P₂K₂ (300 g N + 400 g P₂O₅ + 600 g K₂O) treatment combination.

KEY WORDS : Guava, Fertilizers, NPK, Physico-chemical parameters

HOW TO CITE THIS ARTICLE : Sharma, Vijesh Kumar, Tiwari, Rajesh and Gupta, B.S. (2012). Quantitative and qualitative enhancement in guava cv. L-49 by the application of NPK fertilizers under Malwa plateau conditions of Madhya Pradesh, *Asian J. Hort.*, 7(2) : 493-496.

Guava (*Psidium guajava* L.), is one of most popular fruits grown in tropical, sub-tropical and some parts of arid regions of India, which belongs to the family Myrtaceae. This fruit originated in tropical America and seems to have been growing from Mexico to Peru. It is the fifth most important fruit in area after mango, banana, citrus and apple and fifth most important fruit in production after banana, mango, citrus and papaya. Nature has endowed it liberally to tolerate the drought and flood condition and adaptability to a wide range of soil and climatic conditions. Its cultural requirement is also very limited. Besides other factors of crop production, nutrients play an important role in the production of guava. Medeiros *et al.* (2004) also reported that, the application of N fertilizer provided an increment in the diameter of the guava fruits. The total soluble solids, ascorbic acid, reducing sugar, non-reducing sugar, total sugar and pectin content, as well as TSS: acid ratio in fruits linearly increased with increasing rates of nitrogen fertilizer (Lal and Sen, 2001).

Fruit quality was best when the trees received N: P₂O₅: K₂O at 600:300:300 g/tree (Wagh and Mahajan, 1987).

RESEARCH METHODS

The experiment was conducted at the Department of Fruit Science, K.N.K. College of Horticulture, Mandsoor (M.P.) during 2010-2011. The soil of the experimental plot was black in colour and having 165.20, 15.75 and 520.40 kg nitrogen, phosphorus and potassium per hectare, respectively along with pH of 7.9. The experiment was laid out in Factorial Randomized Block Design (Factorial RBD) on six year old guava tree cv. L-49 planted at the distance of 6 m x 6 m. Nitrogen, phosphorus and potassium were applied in the form of urea (46% N), single super phosphate (16% P₂O₅) and muriate of potash (60% K₂O), respectively. There were three levels of each of nitrogen (0, 300 and 600 g N/tree), phosphorus (0, 200 and 400 g P₂O₅/tree) and potassium (0, 300 and 600 g K₂O/tree)