



Integrated nutrient management in rejuvenated guava (*Psidium guajava*) orchard under semiarid conditions of Eastern Rajasthan

R K MEENA¹, L N MAHWER², P L SAROJ³, D K SAROLI⁴, H R MEENA⁵ and M KANWAT⁶

Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan 313 001

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ABSTRACT

An investigation was carried out during 2010-11 to study the effect of integrated nutrients management after rejuvenating more than 25 years old guava orchard planted at 6×6 m apart under semiarid conditions of eastern Rajasthan. The results revealed that almost all treatments with combined application of organic and inorganic sources of nutrients had significantly influenced the plant growth and yield of guava fruits over control (only recommended dose of NPK, i.e. 500: 200: 500 g/plant-T₁). Among different treatments, application of 2/3 of T₁+5 kg Vermicompost+250g *Azospirillum*+250g *Azotobacter*/plant (T₁₅) significantly increased the vegetative growth of rejuvenated plants in terms of shoot length (148.99 cm), shoot diameter (11.15 mm), number of leaves per shoot (63.25), mean girth of primary branches (15.8 cm), plant spread E-W (3.96 m), N-S (3.55m), canopy volume (7.109 m³) and also fruit diameter polar and equatorial (6.74 and 6.72 cm) and fruit weight (109.71g fruit) but the flowering behavior, fruit yield and quality parameters of guava fruit were significantly superior with the application of 2/3 of T₁+25 kg FYM+250g *Azospirillum*+250g *Azotobacter*/Plant (T₁₁). Further, this treatment (T₁₁) also influenced early flowering as less number of days required for flowering (29.31days), highest number of flowers per shoot (8.13), better fruit set (39.95%), fruit retention (58.50%) and fruit yield (15.03 kg/plant and 4.18 t/ha) in third year of rejuvenation. The fruits harvested under this treatment exhibited best quality traits, which were judged by analyzing TSS (13.93 °B), acidity (0.454%), ascorbic acid (231.21 mg/100 g), TSS:acid ratio (30.77), reducing sugar (4.61%), non-reducing sugar (3.07%) and total sugar (7.29%). Therefore, application of 2/3 quantity of recommended dose of NPK, i.e. 500:200:500 g+25 kg FYM+250g *Azospirillum*+250g *Azotobacter*/plant is recommended for harvesting more than 20% higher yield and better quality fruits from rejuvenated guava orchards.