



Research Paper

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Effect of plant growth regulators on quality of winter season guava (*Psidium guajava* L.) cv. L-49 (SARDAR)

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ABSTRACT : An experiment was undertaken to study the effect of NAA, GA₃, CCC and 2,4-D on quality of guava during monsoon 2009-10 at the Horticultural Instructional Farm, C.P. College of Agriculture, S. D. Agricultural University, Sardarkrushinagar, Gujarat. In present investigation, application of 40 ppm and 20 ppm NAA significantly enhanced the quality parameters viz., TSS (10.95 and 10.87 %), reducing sugar (3.79 and 3.65 %), non-reducing sugar (2.65 and 2.56 %), total sugar (6.44 and 6.21 %), and ascorbic acid content (180.30 and 173.97 mg/100g pulp, respectively). The minimum acidity (0.42 %) was also observed with 40 ppm treatments.

KEY WORDS : Guava, PGRs, Quality

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The guava (*Psidium guajava* L.) is one of the most common and important fruit crop cultivated all over India. It is a popular fruit among people primarily because of its moderate price in market and also being a rich source of vitamin 'C.' Botanically guava belongs to the large family of Myrtaceae. It is classified under genus *Psidium*, which contains 150 species, but only *Psidium guajava* has been exploited commercially. It is also a good source of carbohydrates, minerals, iron, calcium and phosphorus. It possesses a high nutritional value. According to Singh *et al.* (1963), each 100 grams of edible portion of guava contains 76.0 g of moisture, 1.5 g protein, 0.2 g fat, 14.5 g carbohydrates, 0.01 g calcium, 0.04 g phosphorus, 1.0 g iron, 30.0 mg thiamine, 30.0 mg riboflavin, 299.0 mg ascorbic acid and 0.02 mg nicotinic acid.

RESEARCH METHODS

The present investigation entitled effect of plant growth regulators on quality of winter season guava (*Psidium guajava* L.) cv. L-49 (Sardar) was under taken during monsoon 2009-10 at the Horticultural Instructional Farm, Chimanbhai Patel College of Agriculture, Sardarkrushinagar Dantiwada

Agricultural University, Sardarkrushinagar, District-Banaskantha, Gujarat. The experiment was conducted in guava orchard planted at 6 x 6 m distance. The experiment was conducted in Randomized Block Design with nine treatments and four replications. The treatments consisted of T₁ (Control), T₂ (GA₃ 50 ppm), T₃ (GA₃ 100 ppm), T₄ (NAA 20 ppm), T₅ (NAA 40 ppm), T₆ (2,4-D 5 ppm), T₇ (2,4-D 10 ppm), T₈ (CCC 250 ppm) and T₉ (CCC 500ppm). Two sprays of PGRs *i.e.* 1st spray at last week of June and 2nd spray at second week of July were taken.

RESEARCH FINDINGS AND DISCUSSION

The quality of guava fruit was improved with varying concentrations of NAA. Amongst different concentrations, NAA 40 ppm significantly increased total sugar percentage (6.44 %) (Table 1). It might be due to the auxin synthesis, which increased the metabolites available for total soluble solids formation. The results are in accordance with those of Rajput *et al.* (1977) and Brahmachari *et al.* (1996).

In present investigation, the TSS content of fruit was significantly increased by the various treatments. However, among all the plant growth regulators, T₅ (NAA 40 ppm) registered the highest TSS (10.95 %) and it remained at par