



Diversity studies in quality and biochemical attributes of guava genotypes

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ABSTRACT

The present investigation was carried out on ten genotypes of guava viz., GRS₁, GRS₂, GRS₃, GRS₄, GWS₅, GWS₆, GWS₇, GWS₈, GWS₉ and L-49 during winter season of 2009-10 in randomized block design with three replications of each genotype. The results were obtained for the quality and biochemical characters. The weight of pulp was maximum in L-49 (209.32g), followed by white fleshed genotype GWS₆ (176.72 g), however, the highest pulp content was recorded in white fleshed genotype GRS₄ (98.39%). The fruits of genotype GRS₄ was recorded the lowest weight of seeds per fruit (1.96 g) and number of seeds per fruit (193) and weight of 100 seeds (1.05 g). The highest pulp: seed ratio was recorded in red fleshed genotype GRS₄ (68.29). Significantly, the highest TSS was recorded in white fleshed genotype GWS₆ (12.37 °Brix), acidity ranged from 0.39 per cent in genotype GRS₄ to 0.49 per cent in genotype GWS₈, ascorbic acid ranged from 177.40 mg per 100g in genotype GRS₃ to 292.85 mg per 100g in genotype GWS₆. The highest content of lycopene (4.71 mg /100 g) was recorded in genotype GRS₄. Total sugar ranged from 6.32 per cent in genotypes GWS₅ to 8.47 per cent in genotype GWS₆, reducing sugar ranged from 3.69 per cent in GWS₅ to 5.39 per cent in genotype GRS₄ and non-reducing sugar ranged from 1.53 per cent in genotype GRS₁ to 3.31 per cent in genotype GWS₆.

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Guava (*Psidium guajava* L.) belongs to family Myrtaceae is the “Apple of the tropics” and “Poor man’s apple”, is one of the most important fruit in India. It is rich source of vitamin C and it contains three to four times more vitamin C as compared to fresh orange juice, also a good source of vitamin A and B along with the minerals namely iron, calcium, and phosphorus. The ripe fruit contains dry matter (12.3-26.3%), ash (0.51-1.02%), crude fat (0.10-0.70%), crude protein (0.82-1.45%), and crude fibre (2.0-7.2%). The T.S.S. content of the fruit varies from (8.0-19.4 °Brix), fructose (59%), glucose (36%) and sucrose (5%) are the predominant sugars in the ripe guava fruits. Total sugar contains (4.2-11.1%), reducing sugar (2.1-6.1%) and non-reducing sugar (1.0-4.5%). pH ranges from 4.1-5.4%. Acidity ranges from 0.08 – 2.20% in which citric and malic are the predominant organic acids. The ascorbic acid content ranges from (75 to 260 mg/ 100 g) (Adsule and Kadam, 2005). However, guava is highly perishable fruit due to which growers facing serious problems after harvesting. However, it is guaranteed source of ascorbic acid, pectin, sugar etc. which play the role in processing. Hence, the present

investigation was undertaken to identify the cultivars having superior genetic make-up with in-built ability to fight abiotic and biotic stresses.

MATERIALS AND METHODS

The experiment was conducted at Instructional-cum-Research Farm, Department of Horticulture, College of Agriculture, Latur on well established five years old orchard of guava planted at 5.0 x 5.0 m. Total ten genotypes were identified for study viz., GRS₁, GRS₂, GRS₃, GRS₄, GWS₅, GWS₆, GWS₇, GWS₈, GWS₉ and L-49. Among them four genotypes were red fleshed and five genotypes were white fleshed and one was L-49 as a control. The recommended package of agronomical practices and plant protection measures obligatory to raise a good crop were followed. The experiment was laid out in Randomized Block Design (RBD) with three replications as per the procedure outlined by Panse and Sukhatme (1967). Different quality and biochemical attributes were studied during investigation.