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Research Paper

Correlation studies in guava

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ABSTRACT

The present investigation was carried out on ten genotypes of guava *viz.*, GRS_1, GRS_2, GRS_3, GRS_4, GWS_5, GWS_6, GWS_7, GWS_8 GWS_9 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 correlation coefficient. The correlation coefficients indicate the presence of inherent association between various characters. The study revealed that fruit yield per hectare exhibited highly significant and positive correlation with height of tree, tree volume, number of fruits per tree, pulp: seed ratio, ascorbic acid and total sugar at genotypic and phenotypic level and pulp content at genotypic level. Fruit yield per hectare also showed significant and positive correlation with TSS and non-reducing sugar at genotypic and phenotypic level and pulp content at phenotypic level. Also, it showed highly significant but negative correlation with number of seeds per fruit, weight of 100 seeds and acidity at genotypic level, whereas, it showed significant but negative association with days to maturity at both the levels. The remaining characters *viz.*, leaf area, weight of fruit, volume of fruit, weight of pulp, lycopene and reducing sugar showed positive correlation with fruit yield per hectare at both the levels. Hence, these characters may be given consideration while making selection for the improvement of guava genotypes.

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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 native to tropical America which was introduced in India in the 17th century by Portuguese and the area under this crop is extending from Mexico to Peru and is now being commercially cultivated in more than 60 countries of the world including 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. It is used for preparation of jam and jelly due to its high pectin content. Guava is one of the fourth most important fruit crop in India after Mango, Banana and Citrus. In India it occupies nearly 1.782 lakh hectares of area with production of 19.750 lakh metric tonnes, with average productivity of 11.1 metric tonnes per hectare (Anonymous, 2008). Relationship with yield of twenty one characters in guava was studied and reported in this experiment.

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.*, GRS_1, GRS_2, GRS_3, GRS_4, GWS_5, GWS_6, GWS_7, GWS_8, GWS_9 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).

RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized below :

Growth attributes:

In the present study of guava genotypes, height of