

Genetic diversity in mango (*Mangifera indica* L.) genotypic and phenotypic characterization

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SUMMARY

The highest number of fruits per tree and yield of fruits (kg/tree) was recorded in Pottalma and the lowest number of fruits per tree and yield of fruits (kg/tree) were observed in Kalepad and Mulgoa, respectively. In respect of biochemical characters, the highest TSS was recorded in Himayuddin and the lowest TSS was recorded in Neelum. The highest acidity and ascorbic acid content were recorded in Kalepad and the lowest in Baneshan and Mulgoa, respectively. By the application of clustering technique, the twelve genotypes were grouped into four clusters. Among the four clusters, cluster I was the biggest one, consisting of six genotypes and cluster II contained four genotypes, while cluster three and four had one genotype each. Among sixteen traits studied, number of fruits per tree and yield in kg showed higher degree of phenotypic and genotypic coefficient of variation. In correlation studies, yield per tree, plant height, tree spread and tree girth had high correlation with yield.

Key Words : Genetic diversity, D² analysis, Genotypic and phenotypic coefficient of variation, Mango

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Mango (*Mangifera indica* L.) is the most important fruit crop of India and it has been cultivated in India for over 4000 years. There are at least 1000 named cultivars in India. Mango is considered as the national fruit of India. In South India alone, over 350 varieties are being cultivated (Naik, 1963). Urbanization and industrialization paved way to large scale destruction of mango germplasm. Moreover, there was a shift in the preference of people towards new varieties and grafts. This has resulted in genetic erosion of traditional mango germplasm of state Tamilnadu. Many of our traditional varieties have become extinct. Therefore, there is an urgent

need to catalogue and conserve at least the available traditional genetic resources, which are on the verge of extinction. Proper assessment of existing genetic diversity is important in view of emerging patent rules. The excessive preference among the growers for collection of large number of varieties in their mixed orchards is another potent cause for the present chaotic nomenclature and classification. Very little information is available with cultivars of Tamil Nadu based on correlation and characterization. So the present study was taken up to assist phenotypic and genotypic variances characterization of mango cultivar of Tamil Nadu.

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MATERIALS AND METHODS

The experiment was conducted on central block of Horticultural College and Research Institute, Periyakulam. Twelve genotypes such as Senduram, Alphonso, Himayuddin, Baneshan, Neelum, PKM 1, Panchavaranam, Swarnarekha, Mulgoa, Pottalma, Kalepad and Rumani were maintained in the germplasm collection of department of fruit crops in periyakulam with three replications and five plants per