Genetic diversity in mango (*Mangifera indica* L.) genotypes and molecular characterization

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Pre harvest sprays of different calcium, particularly 1.0 per cent calcium chloride, reduce physiological loss in weight as well as it increase the firmness and shelf life of fruit. While, rotting per cent and organoleptic rating was increase in calcium chloride (CaCl2) 0.5 per cent among all the treatments when fruits were ripened.

Key words : Genetic diversity, Mango, Genotypes, Molecular characterization

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INTRODUCTION

ango (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 (Kumar et al., 2001). 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 Tamil Nadu. 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. In this context, systematic studies to characterize the mango varieties based on morphological, floral and fruit traits were earlier attempted by Naik and Gangolly (1950), however, subsequent efforts in this regard are not appreciable. 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.

This situation warrants a reliable, scientific method

to document and classify the available genotypes (varieties) in mango. RAPD is a quick, reliable and widely accepted molecular marker. It is simple to perform and is preferable to experiments where the genotypes of a large number of individuals are to be determined at a few genetic loci. The RAPD technique has high potential for the identification and management of mango germplasm (*Kumar et al., 2001*). However, very little information is available with cultivars of Tamilnadu based on molecular characterization. So the present study was taken up to assist molecular characterization of mango cultivar of Tamil Nadu.

RESEARCH METHODOLOGY

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 replication in randomized block design (RBD). The Genetic variability and diversity analysis for morphoeconomic traits (vegetative characters, growth habit, bearing habit, tree height, trunk girth, tree spread and number of branches per tree), leaf characters (leaf shape, leaf length, young