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Biochemical changes in mango fruit varieties at different stages of growth and development under south Gujarat conditions

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Abstract : The experiment entitled "Biochemical characters of some mango (*Mangifera indica* L.) cultivars and hybrids at different stages of growth and development under south Gujarat conditions" was conducted at the Department of Fruit Science, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari (Gujarat). In this experiment six cultivars of mango viz., Alphonso, Dashehari, Kesar, Neelum, Rajapuri and Totapuri as well as three hybrids viz., Amrapalli, Mallika and Neelphonso were tested for their chemical properties. The experiment was laid out in completely randomized design (CRD) with nine treatments and three repetitions. Regarding chemical parameters, the maximum total soluble solids (TSS %) was recorded in Kesar at marble, mature and ripe stages and in Alphonso at pre-mature stage. The maximum total sugar (%) and reducing sugar (%) were recorded in Alphonso. The non reducing sugar (%) was observed maximum in Alphonso. Titrable acidity (%) was found minimum in Totapuri at marble, pre-mature and mature stages and in Alphonso at ripe stage. TSS: Acidity ratio was maximum in Totapuri at marble, pre-mature and mature stages and in Alphonso at ripe stage.

Key words : Mango varieties, Quality parameters, Stages of growth and development, Storage

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Mango (*Mangifera indica* L.) is the premier fruit of the world belongs to the family Anacardiaceae. It is grown in 111 countries around the world, but this fruit occupies a unique place amongst fruit crops grown for well over 4000 years in Indian subcontinent. Out of 69 species of mango, all the edible and commercial mango cultivars or varieties grown throughout the world belong to *Mangifera indica* L.

Owing to easy availability of this national fruit for a longer period, an excellent flavour and delicious taste with uniform blend of sweet and sour and nutritive value, it attains mass appeal and is called 'The King of the fruits'. Besides this fruit possesses a good source of vitamin-A, B-carotene, vitamin-B complex, vitamin-C, minerals, digestible sugars and trace elements.

In the past, fruit quality tests with regard to chemical parameters were studied only at ripe stage. However,

changes in mango fruit were not studied so far for the different varieties at marble, per-mature, mature and ripe stages of growth. To understand the bio-chemical changes in mango fruits at different stages of growth and development, the investigation entitled studies on the changes in chemical properties of some mango cultivars and hybrids at different stages of growth and development under south Gujarat conditions was planned on the nine varieties of mango viz., Alphonso, Kesar, Dashehari, Rajapuri, Totapuri, Neelum, Neelphonso, Amrapalli and Mallika.

RESEARCH METHODS

The experiment was carried out at the Laboratory of Fruit Science, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari. The