

Effect of post harvest treatments on physiological characters of mango cv. KESAR during storage

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ABSTRACT

A study was carried out to evaluate the role of post harvest treatments on ripening, quality and shelf life of mango (cv. KESAR) fruit during storage. The post harvest treatment with Ethrel enhanced ripening and gave early marketable fruits. Ethrel 1000 ppm gave maximum ripened fruits at 6th days of storage. Similarly, Ethrel 750 and 500 ppm also gave highest ripen fruits at 9th and 12th days of storage and recorded higher organoleptic score. GA₃ 250 ppm reduced physiological loss in weight, delayed fruit ripening, increased shelf life of fruits, reduced spoilage, retained fruit firmness and gave maximum organoleptic score like colour, taste and overall acceptability during storage. The quality of fruits also improved by different growth regulator treatments.

Key words : Mango, Post harvest, Ethrel, Organoleptic, GA₃

The mango (*Mangifera indica* L.) is a useful and delicious fruit. It is the part of culture and religion since long time. Besides fine taste, its high palatability, sweet fragrance, attractive colour and nutritional value, it is called as "king of fruits." In India, area under mango cultivation is 19,61,900 hectare with production of 11,605.2 metric tonnes during 2004-2005. Post harvest handling can play a major role to reduce post harvest losses. The abundant supply of mango in the market from the majority of orchard takes place in a short span which causes glut in the market thereby, causing reduction in prices. Mango fruits cannot be stored for a longer period at ambient temperatures. For good market price, it becomes essential that fruits must be transported to the market without spoilage. The study through the experiment will help to investigate the possibilities of extending or hastening the shelf life of mango fruits cv. 'KESAR' by applying various post harvest treatments for tide over glut period and prevent pests and diseases infection after harvesting.

MATERIALS AND METHODS

Green mature fruits with uniform size and shape having specific gravity between 1.0 and 1.04 were selected. The trial was conducted during the year 2005-06 with C.R.D. The trial comprised of different twelve treatments including control was used. The fruits were dipped for 10 minutes in GA₃ 250, 500 and 750 ppm, ethrel 500, 750 and 1000 ppm, neem leaf extract @ 5 and 10 %, hot water 50±2°C, carbendazim 500 ppm and hot water 50 ±2°C + carbendazim 500 ppm. After treatment, the fruits were air dried for 30 minutes. For hot water, fruits

were dipped in water bath at 50 ± 2°C for 10 minutes. For hydro-cooling, fruit were dipped in cool water at 13 ± 1°C temperature and the constant temperature were maintained by continuous adding of ice water. Temperature was measured by using thermometer. Treated fruits were packed as such without wrapping, in Corrugated Fibre Board (CFB) boxes and stored in the laboratory at room temperature. Boxes were of 30 x 30 x 30 cm size having 8 vents of 3 cm diameter of each one. Paper cutting were used as a cushioning material during storage. The fruits were selected from each lot at a time and used for analysis and organoleptic test. Analysis was done at 3 days interval and all the observations were recorded till the fruits were over ripe.

RESULTS AND DISCUSSION

The percentage of loss in weight of fruit was increased with increase of storage period (Table 1). Significantly minimum loss in weight (23.18%) was noted when mango fruits treated with GA₃ 750 ppm (T₄) during all days of storage. However, it was found at par with treatment T₂ and T₃. The reduced weight loss might be due to antisenescence property of GA₃ and also binding the ethylene biosynthesis. The result is in conformity with those of Khader (1992) and Reddy and Haripriya (2002) in mango. The maximum weight loss was recorded in T₁₀ (25.85%) followed by control (24.97%). This has been due to activated enzymatic processes at higher temperature which enhanced the rate of various physiological and degradative processes. This result confirmed the findings of Kumar and Dhawan (1995).