

Effect of pre-cooling and storage methods on extending the shelf life and quality of mango cv. kesar fruits

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SUMMARY : Freshly harvested Kesar mango fruits were subjected to treatments of forced air cooling (13° C) and hydro cooling (13° C) for 4 hr. These fruits and untreated lot (as control) were kept for storage at ambient condition, cold storage at 13° and 16° C and zero energy cool chamber (ZECC). Result indicated that the Kesar mango fruits treated with hydro cooling (13° C) for 4 hr could be kept up to 31.71 days, as compared with untreated fruits 25.14 days shelf life and in cold storage at 13° C kept up to 38.48 days, as compared with ambient condition 18.69 days shelf life. Data on shelf life, physiological loss in weight (PLW), firmness, TSS, acidity and total sugar indicated that, the hydro cooling and cold storage might be an ideal storage in order to increase the domestics as well as export marketing of Kesar mango fruits.

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Mango (*Mangifera indica* L.) belongs to family Anacardiaceae is the “King of Fruits” owing to its attractive colour, excellent taste, exotic flavour, exemplary nutritive value and its delicacy of table of rich as well as food for million of poor people during summer. It is gaining popularity in various parts of the world mainly due to its wide adaptability, high yield and attractive fruit as well as pulp colour. The storage life of mango fruit is not more than 8-10 days at room temperature and thus early perishability of the fruit poses a problem. Owing to lack of information on appropriate post harvest treatments and cold storage, the fruits only lose their quality but also encounter a substantial post harvest loss. The research efforts have been helped to increase the production of mango fruit but the purpose of obtaining maximum profit will not be served unless the increased production is supplemented with similar efforts to minimise their post

harvest losses, which range between 25-30 per cent (Salunkhe and Desai, 1984).

There is a very little information available on Kesar fruit with reference to physio-chemical changes on pre-cooling and storage methods. Therefore, a detailed study on these aspects was taken to preserve the fruits in good condition for longer period during ripening.

EXPERIMENTAL METHODS

The fruits were harvested early in the morning at proper stage of maturity. Fruit were harvested by using Dapoli harvester and as such the stalk length was kept 2.5 cm. Then the fruits were brought to the Post Graduate Laboratory, Department of Horticulture, College of Agriculture, Junagadh Agricultural University, Junagadh. The experiment was conducted in a Factorial Completely Randomized Design (FCRD), with three replications were treated as in control (P_0), forced air cooling 13° C for 4 hr (P_1) and hydro cooling at 13° C for 4 hr (P_2) and stored in ambient condition (S_0), cold storage at 13° (S_1), cold storage at 16° (S_2) and zero energy cool chamber (S_3) and its combinations. Each treatment had consisted twenty fruits.

After that fruits were labelled according to treatments and replication. Initial weight of fruits were recorded and

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