



Research Paper

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Effect of grading and packaging with transportation on fruit quality and shelf life of mango fruits

■ PIYUSH PATEL, SANJAY SINGH¹, J.C. CHAVDA¹ AND K.A. PATEL¹

Members of the Research Forum

Associated Authors:

¹Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, ANAND (GUJARAT) INDIA

ABSTRACT : The experiment was conducted in the month of June, 2010 at Department of Horticulture, B. A. College of Agriculture, Anand Agricultural University, Anand to justify the effect of grading and packaging along with transportation on quality of mango fruits during storage. The graded fruits (grade A and B) were packed in different containers (Bamboo basket without any lining, Bamboo basket with newspaper lining and polyethylene lining, CFB box with newspaper lining and polyethylene lining, plastic crates with newspaper lining and polyethylene lining) and control (gunny bag) and transported for 200 km and then kept in room condition at 3, 6, 9 and 12 days after storage. The fruits were examined for physiological loss in weight, spoilage loss and shelf life with respect to physiological parameters. While, chemical parameters *viz.*, TSS, acidity, ascorbic acid, total sugar, reducing sugar, non reducing sugar, ripening per cent, organoleptic score and fruit firmness were examined on 3rd, 6th, 9th and 12th day of storage. The result revealed that grade A (300 ± 50 g) fruits packed in CFB box having newspaper lining proved to be the best treatment than grade B (200 ± 50 g) fruits as well as rest of the containers. The treatment effectively reduced physiological loss in weight and spoilage loss with minimum changes in chemical constituents than the rest of the treatments and hence can be used for post harvest management of mango fruits.

KEY WORDS : Mango, Grading, Packaging, Lining, Transportation

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Author for correspondence :

PIYUSH PATEL

Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, ANAND (GUJARAT) INDIA

Mango (*Mangifera indica* L.) belonging to Family Anacardiaceae is the most important commercially grown fruit crop of the country. It is called as king of the fruits. India ranks first among world's mango producing countries accounting for about 50% of the world's mango production. The fruit is cultivated in the largest area *i.e.* 2,312 thousand ha and the production is around 15.02 million tons and contributing 21.0% of the total production of mango in India (2009-2010). Other major mango producing countries of the world include China, Thailand, Mexico, Pakistan, Philippines, Indonesia, Brazil, Nigeria and Egypt. India's share is around 52% of world production *i.e.* 12 million tones.

There is a considerable variation exists in the quality of harvested fruit due to genetical, environmental and agronomic factors and, therefore, requires grading to get suitable returns from the market. Systematic grading coupled with the scientific packaging and storage reduces the post harvest losses and

marketing costs substantially, which enables the producer to fetch a competitive price. Mango should be graded on the weight basis to fetch better price in the market.

Adequate packaging protects the fruits from physiological, pathological and physical deterioration in the marketing channels and retains their attractiveness.

Therefore, an experiment has been planned to study the effect of grading and packaging along with transportation on quality of mango fruits.

RESEARCH METHODS

The present investigation was carried out during June, 2010 at the P.G. Laboratory, Department of Horticulture, B. A. College of Agriculture, Anand Agricultural University, Anand. The experiment was laid out in Completely Randomized Design (Factorial) with four replications.

Mango fruits cv. KESAR of uniform vigour and size were