Research Paper | *The Asian Journal of Horticulture,* (June, 2010) Vol. 5 No. 1 : 103-107

Effect of various post-harvest treatments on shelf life, physio-chemical characteristics and quality pomegranate fruit variety Phule arakta under different storage conditions

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Accepted : *March, 2010*

ABSTRACT

The present investigation entitled, " Effect of various post harvest treatment on extending shelf life of pomegranate (*Punica granatum* L.) fruits cv. PHULE ARAKTA with three post harvest treatment and two storage conditions was conducted in the year 2005-06 with three replication in Factorial Completely Randomised Design (F.C.R.D.). The treated fruits of pomegranate cv. PHULE ARAKTA was stored at room temperature 22.17 to 24.36^{0}C, 52.0 to 82.0 % RH and in cool store (8^{0}C, 90.0 to 95.0 % RH). In all post harvest treatments, the treatment cool store and room temperature showed the trends of rise and falls in TSS, decrease in acidity and juice content with increasing physiological loss in weight, irrespective of storage conditions. The present study made it clear that pomegranate fruits coated with waxol + carbendazim (0.1 %) had great significance in retaining of physico-chemical characteristics and reducing the wastage during post harvest storage. The problem of fruit growers and handlers may be solved by adopting packaging material like CFB boxes along with simple post harvest treatment of wax coating and fungicides to fruit and use of cool store. The shelf life of pomegranate fruits was extended upto 50 days in case of variety Phule Arakta when treated with waxol + carbendazim (0.1 %) in cool store. The shelf life of pomegranate fruit was extended upto 24 days in case of Phule Arakta variety at room temperature storage when treated with waxol + carbendazim (0.1 %). To conclude, it may be stated that the storage of pomegranate fruit in cool store with dipping treatment of waxol + carbendazim 0.1 % should be recommended.

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Key words : Pomegranate, Post harvest treatments, Shelf life, Physiochemical characters and quality

Pomegranate fruit has poor processing quality, therefore, mainly used for table purpose only. Under these circumstances, handling and marketing become important to sustain its increasing area and production for providing remunerative prices to farmers.

The post harvest losses in pomegranate occur due to lack of proper packing material and improper handling during long transport. Extension of shelf life can be possible by checking the rate of respiration, transpiration and microbial infection. No systematic studies have so far been carried out on extending the shelf life of pomegranate fruit by giving simple post harvest treatment like use of wax coating with fungicidal dip, packing in corrugated fibre board (CFB) boxes and storage in cool store.

MATERIALS AND METHODS

The experiment was conducted in AICRP on Arid Zone Fruits, Department of Horticulture, Mahatma Phule Krishi Vidyapeeth, Rahuri in Ahmednagar District (M.S.) under APEDA project during the year 2004-05.

Experimental details :

The experiment was conducted in Factorial Completely Randomised Design (FCRD) with three post harvest treatments and two storage conditions and treatment were replicated three times.

Main treatment	Sub treatments
1. Wax-coating (W-0-9) (T_1)	1. Cool store (S_1)
2. W-O-9 + carbendazim 0.1 % (T_2)	2. Room temperature (S_2)
3. Control-T_3	

Treatment combination : 06

Wax coating :

Wax emulsion (9 %) solution was prepared in a plastic drum and the fruits were dipped in it for 40 to 60 seconds. Fungicidal treatment was given by dissolving the respective fungicide into wax emulsion. Wax emulsion does not leave only residue or import undesirable odour of flavour interfere with the natural appearance of fruit and its quality (Dalal *et al.*,1971).

Packaging :

The fruit were then packed in export quality