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Effect of packing and cool chamber storage on post harvest life of amaranthus

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ABSTRACT

The combination of cool chamber storage and packaging showed beneficial effect on extending the shelf life and quality of amaranthus compared to those in ambient conditions. The cool chamber storage in combination with packaging extended the shelf life by four days over those non packed ones stored in ambient condition (one day). Amaranthus packed in 150 gauge polyethylene bags with zero ventilation and kept in cool chamber recorded the minimum PLW (12 %), wilting (28.75%), rotting (9.5%) and maintained maximum moisture content (78.66%), titratable acidity (0.63%) and chlorophyll content (1.69 mg/g) compared to other treatments.

Key words : Amaranthus, Cool chamber, Packaging, Storage, Ventilation.

Amaranthus is one of the most commonly grown indigenous vegetables. The genus amaranthus includes 50-60 species out of which A. *tricolor, A. blitum and A. lividus* are generally grown for leafy vegetables. Amaranthus is considered to be the cheapest leafy vegetable in the market and it could be rightly described as a "poor man's vegetable". Losses that occur due to improper harvesting, transportation, storage and distribution force the grower to resort to distress sale to middlemen. Post harvest losses may be reduced by adopting necessary cultural operations, careful handling and packaging and also by different storage methods such as refrigeration, controlled atmosphere storage, pre packing, waxing, irradiation, evaporative cooling etc. Among these methods, evaporative cooling system and packaging are most suitable for developing countries. Based on the principal of direct evaporative cooling, low energy input cool chambers have been developed (Roy and Khurdiya, 1986). Packaging of commodity with polyethylene bags is found to have beneficial effects of extending the storage life (Marchal and Nolin, 1990). In the present investigation, an attempt was made to study the effect of packaging and cool chamber storage on the quality and storage life of amaranthus leafy vegetable.

MATERIALS AND METHODS

The experiment was conducted at the Division of Horticulture, University of Agricultural Sciences, Bangalore. Mature amaranthus plants of uniform colour and size harvested along with roots were brought to the laboratory on the same day and the treatments were imposed soon after. The treatments were

T_1 - Keeping unpacked coriander in bamboo basket and stored in ambient condition (AC).

T_2 - Keeping unpacked coriander in bamboo basket and stored in cool chamber (CC).

T_3 - Coriander packed in polyethylene bags of 100 gauge thickness with zero ventilation and stored in AC.

T_4 - Coriander packed in polyethylene bags of 100 gauge thickness with zero ventilation and stored in CC.

T_5 - Coriander packed in polyethylene bags of 100 gauge thickness with 0.5 per cent ventilation and stored in AC.

T_6 - Coriander packed in polyethylene bags of 100 gauge thickness with 0.5 per cent ventilation and stored in CC.

T_7 - Coriander packed in polyethylene bags of 100 gauge thickness with 1 per cent ventilation and stored in AC.

T_8 - Coriander packed in polyethylene bags of 100 gauge thickness with 1 per cent ventilation and stored in CC.

T_9 - Coriander packed in polyethylene bags of 150 gauge thickness with zero ventilation and stored in AC.

T_{10} - Coriander packed in polyethylene bags of 150 gauge thickness with zero ventilation and stored in CC.

T_{11} - Coriander packed in polyethylene bags of 150 gauge thickness with 0.5 per cent ventilation and stored in AC.

T_{12} - Coriander packed in polyethylene bags of 150 gauge thickness with 0.5 per cent ventilation and