

**PERMANENT REFERENCE**

**POST HARVEST HANDLING AND VALUE  
ADDITION OF TOMATOES**

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## ABSTRACT

Tomato (*Lycopersicon esculentum* Mill) is a most popular vegetable in the tropical countries. They abundantly available in the market throughout the year. The post harvest life of tomatoes is very low. They are spoiled due to improper Post harvest handling. Storage condition and packaging materials are necessary to improve the shelf life of tomatoes. Losses can be avoided and overcome by processing tomatoes into value added products viz- canned, paste, puree, juice, jam, ketchup and sauces are some popular value added products made out from tomatoes.

Study was conducted to find out the effect of cushioning material during transportation of tomatoes. Unwrapped tomato fruits and fruits wrapped with newspapers were kept inside the cardboard box. These boxes were transported for a distance of 200km in a bus. Physiological loss in weight was measured and it was higher in unwrapped tomatoes than wrapped tomatoes. Bruising damages also higher in unwrapped tomatoes than wrapped tomatoes.

Full ripe tomato fruits were used for the preparation of tomato jams. Pineapple and apple extract were used as pectin source for preparing two types of tomato jams. Jams were stored at ambient temperature and chemical analysis was done for fresh product and at weekly intervals for four weeks. Reducing sugar percentage, sucrose percentage, acidity, pH, ascorbic acid content and moisture content were evaluated for both jams. The difference of above mentioned parameters were compared with storage periods. The declining trend with storage periods was observed in sucrose percentage, pH and ascorbic acid content for both jams and a

increasing trend was reported with storage periods in reducing sugar percentage, acidity and moisture content for both jams.

Organoleptic evaluation was conducted for both jams immediately after preparation. 9-point hedonic scale ranking method and simple paired comparison test were used to evaluate the organoleptic properties such as taste, colour, texture, flavour and over all eating quality for sensory evaluation by means of preference. The results revealed that there was no significant difference among treatments at 5% probability level in taste, colour and overall eating quality. But both jams were differed significantly at 5% probability level in texture and flavour. According to the simple paired comparison, tomato jam with pineapple pectin (treatment 2) was highly acceptable (62%) than tomato jam with apple pectin (treatment 1).

The study was also focused on the suitability of two types of jams in terms of microbial aspects, which would be beneficial to the consumer. Microbial analysis was done for both jams immediately after preparation and after four weeks storage. No microbial colonies were observed immediately after preparation. After four weeks,  $2.8 \times 10^4$  numbers fungal and  $6.8 \times 10^4$  numbers bacterial colonies and  $1.7 \times 10^4$  numbers fungal and  $3.3 \times 10^4$  numbers bacterial colonies were found in treatment 1 jam and treatment 2 jam respectively.

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