

Accepted : May, 2010

Effect of storage on nutrients and microbial quality on tomato puree

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ABSTRACT

The present investigation was conducted to study the effect of storage on β -carotene, ascorbic acid and lycopene content of tomato puree prepared from two genotypes of tomato (SEL-7 and ARTH-3) and to study their microbial quality. Tomato purees were prepared by preserving with 750 ppm sodium benzoate and acetic acid and stored for a period of six months. By the end of third month of storage period, ascorbic acid was 53.84 and 52.02 mg per 100 g and at the sixth month it was 23.13 and 23.42 mg per 100 g retention of 97.22 and 97.42 per cent of lycopene content, β -carotene content was 17.37 and 15.08 mg per 100 g in tomato puree prepared from SEL-7 and ARTH-3, respectively. Tomato purees were found to be microbiologically safe up to six months.

Key words : Tomato puree, Microbial quality, Storage period, Nutrient

INTRODUCTION

Tomato (*Lycopersicon esculentum* Mill.) as vegetable and fruit occupies an important place in healthy daily diet. Tomato is grown extensively throughout India for fresh consumption and commercial processing (Maini and Kaur, 2000; Prakash, 2000). Carotenoids and ascorbic acid are antioxidant present in tomato (Giovanelli *et al.*, 2001). Tomato is highly perishable and large quantities of tomato fruits go as a waste due to poor storage facilities. It has been estimated that out of 74.41 lakh tones of annual tomato production in the country, 25-30 per cent of tomato fruits get spoiled in India due to glut in the market and improper handling and storage conditions (Mangal and Siddiqui, 2000). With the increase in fruit production, more emphasis should be laid on the extensive use in processing and prevention of spoilage. Proper storage of tomatoes in some preserved form during the seasons of glut will ensure its availability and utilization during the deficiency period. Therefore, to fulfill consumer requirements, considerable amount of tomato has to be processed, and used as the component of the various vegetable dishes and food additives (Giovannucci *et al.*, 2002). Tomato is commonly used fruit in different food preparations and with the seasonal variability, the demand remains unchanged

throughout the year. So making of fresh tomato replacement like and puree at the time of glut can facilitate daily cuisines and preparations during off season.

MATERIALS AND METHODS

Tomato purees were prepared with each genotype (SEL-7 and ARTH-3) by preserving with 750 ppm sodium benzoate and acetic acid. Tomato purees were stored in wide mouth glass bottles which were previously sterilized.

β -carotene, ascorbic acid and lycopene content in tomato purees at the interval of one month were evaluated as per standard method as β -carotene in the sample and was separated by column chromatography and estimated calorimetrically according to the standard method of (A.O.A.C., 1995) analysis. The content of lycopene was estimated using the procedure outlined by Adsule and Ambadan (1979). Ascorbic acid in the sample was estimated by titration method of (A.O.A.C., 1995) and presence of bacteria, mould and yeast was determined in the products to study their keeping quality as per method described by Harrigan and McCance (1976). The non-enzymatic browning was tested using method of Maria and Alberto, (1999), The increase in absorbance of the sample at 440 nm was taken as a measure of non-