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## Effect of storage conditions on quality and shelf life of Guava Jam

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**Abstract**

The work evaluated the storage conditions on the quality and shelf life of guava jam. The prepared jam was carefully poured in steam/ethanol sterilized jam bottles and coked immediately the jam was allowed to cool and was left for storage. In this study of the Physical, Chemical and Microbial parameters were checked during the storage period. The storage interval was done of 0 days, 15 days, 30 days, and 45 days from the day of preparation of jam. There was significant difference in colour and aroma, texture and sweetness of samples tested. The study concludes that the guava jam was good during the storage study

**Keywords:** Shelf life, storage study

**I. Introduction**

Jam is the product made by a boiling fruit pulp with sufficient sugar to reasonable thick consistency. This method still finds wide application in fruits preservation in spite of modern like caning and freezing because it is simple and economical. This based on the formation of gel by the pectin present in fruit, in properly matured fruits forms a solution with water because some of the pectin substances of the fruits remain in solid portion. In the presence of sugar and acid present in fruit, the pectin sets into jelly or jam. Among proceeds fruits, jam, jellies and marmalade enjoy a predominant position. A large number of units are manufacturing this products to cater the demand of domestic and export markets the products are used as bread spread an in bakery items. They can also be taken with chapati, dosa or similar breakfast food to makes they more appearing. The storage study plays a important role in product development, which is conducted for study of all parameters, quality attributes.

**II. Materials and methods**

**Production of guava jam**

The guava used for the work was purchased from market of Allahabad, Uttar Pradesh. The guava were washed thoroughly with clean water and cut into small sizes. Peel was removed by using peeler. Pulping was done to remove hard seed. Addition of proper proportion of sugar and addition of water in sufficient quantity as per requirement. Boiling was done with continuous stirring. Addition of citric acid and pectin in proper proportion. Judging of End-Point was done by cooking up to 105°C or 68-70% T.S.S. or by Sheet test. Then filling hot into well sterilized bottles and then cooling was done. Coat of the wax at the top of bottle i.e. on bottle mouth. Capping of bottle or jar was done. Storage of bottle was done at room temperature.

**III. Results and discussion**

**Storage study of guava jam**

**Result of physical and chemical analysis of guava jam**

Chemical composition represents the nutritional quality of product. Analysis of proximate composition of Guava jam decides the nutritional profile of prepared jam, as Guava is a novel ingredient. The proximate composition of developed jam was determined in dry weight basis and the results are discussed in Table below.

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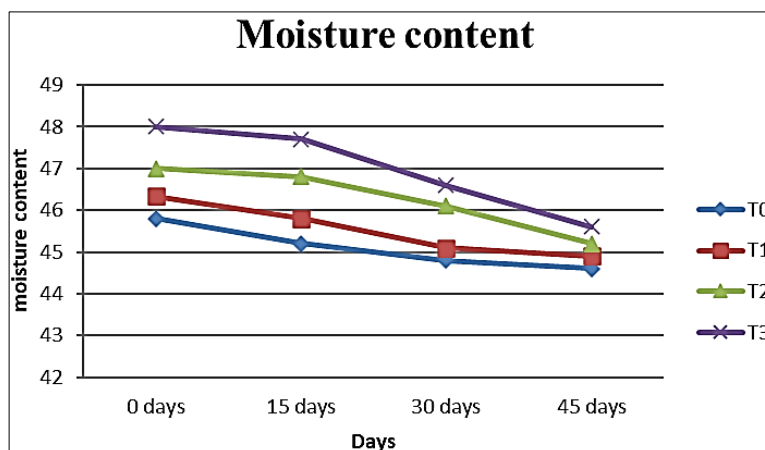
### Chemical analysis of final product

Parameters	Values (%)			
	T0	T1	T2	T3
Moisture	45.8	46.3	47	48
Protein	0.33	0.26	0.28	0.27
Ash	0.32	0.39	0.38	0.37
TSS	68.5	67.5	67.5	67.5
Acidity	0.35	0.47	0.4	0.41
Ph	3.5	6.3	5.2	4.8
Vitamin C (mg/100g)	25	10	8	6

\* Each value represents the average of three determinations

### Effect of storage on moisture content (%) of guava jam

The percent moisture content for sample T<sub>0</sub> was 45.80 on 0 days, 45.20 on 15 days, 44.80 on 30 days, 44.60 on 45 days. T<sub>1</sub> was 46.33 on 0 days, 45.80 on 15 days, 45.10 on 30 days, 44.90 on 45 days. T<sub>2</sub> was 47.00 on 0 days, 46.800 on 15 days, 46.10 on 30 days, 45.20 on 45 days. T<sub>3</sub> was 48.00 on 0 days, 47.70 on 15 days, 46.60 on 30 days, 45.60 on 45 days. Similarly on 15 days, 30 days and 45 days shows increase in the moisture content in the sample. The moisture content is also decreasing during storage due to the permeability of packaging material.

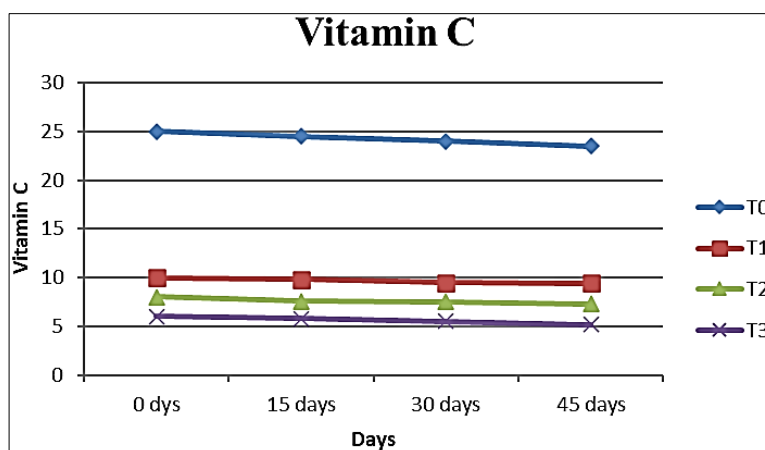


Moisture content (%) of Guava jam during storage

### Effect of storage on vitamin C (mg/100gm) of guava jam

The vitamin C content in the food stuff represents. The vitamin C for sample T<sub>0</sub> on 0 days was 25.0, on 15 days was 24.5, on 30 days was 24.0, and on 45 days was 23.5. Vitamin C for T<sub>1</sub> on 0 days was 10.0, on 15 days were 9.8, on 30 days were 9.5 and on 45 days were 9.4. Vitamin C for T<sub>2</sub> on 0 days 8.0, on 15 days were 7.6, on 30 days were 7.5, and on 45 days

were 7.3. Vitamin C for T<sub>3</sub> on 0 days 6.0, on 15 days were 5.8, on 30 days were 5.5 and on 45 days were 5.2. Similarly, for 15 days, 30 days and 45 days shows slight decrease in vitamin C during storage. The carrot jam is very high in vitamin C and could be useful against vitamin C deficiency-related ailments like scurvy.

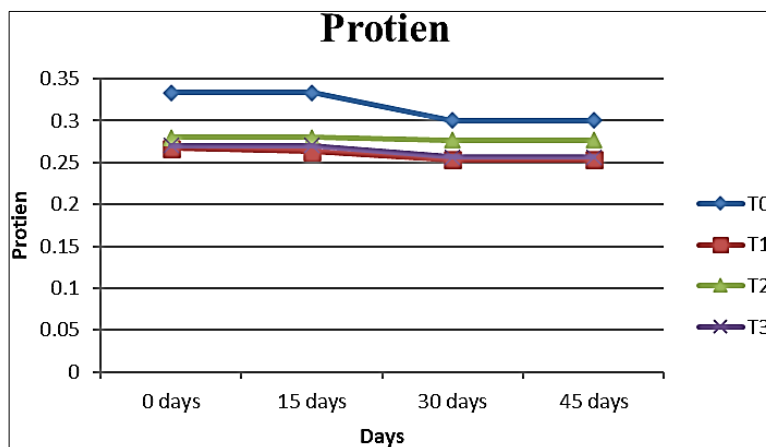


Vitamin C of guava jam during storage

### Effect of storage on protein content (%) of guava jam

The protein content of guava jam samples for sample of T<sub>0</sub> was 0.33 on 0 days, 0.33 on 15 days, 0.30 on 30 days, and 0.30 on 45 days. T<sub>1</sub> was 0.26 on 0 days, 0.26 on 15 days, 0.25 on 30 days, and 0.25 on 45 days. T<sub>2</sub> was 0.28 on 0 days, 0.28

on 15 days, 0.27 on 30 days, 0.27 on 45 days and T<sub>3</sub> was 0.27 on 0 days, 0.27 on 15 days, 0.25 on 30 days, and 0.25 on 45 days. Similarly on 15 days, 30 days and 45 days show decreasing in the protein content in the sample.

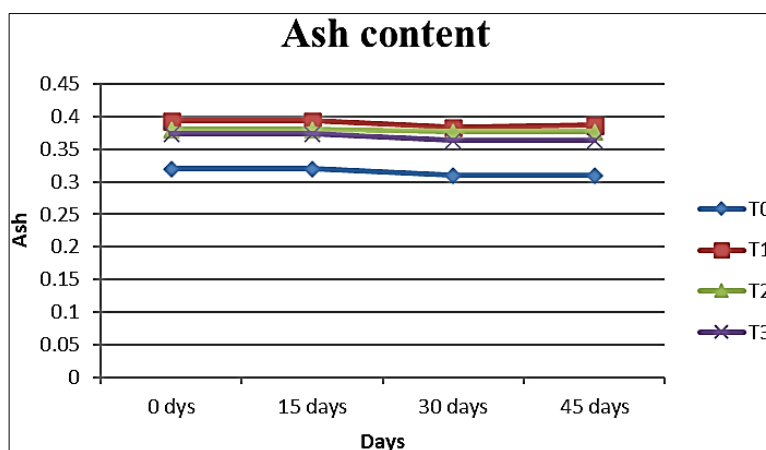


Proteins (%) of guava jam during storage

#### Effect of storage on ash content (%) of guava jam

The ash content of bottle gourd jam samples for sample of T<sub>0</sub> was 0.32 on 0 days, 0.32 on 15 days, 0.31 on 30 days, and 0.31 on 45 days. T<sub>1</sub> was 0.39 on 0 days, 0.39 on 15 days, 0.38 on 30 days, and 0.38 on 45 days. T<sub>2</sub> was 0.38 on 0 days, 0.38

on 15 days, 0.37 on 30 days, 0.37 on 45 days and T<sub>3</sub> was 0.37 on 0 days, 0.37 on 15 days, 0.36 on 30 days, and 0.36 on 45 days. Similarly, on 15 days, 30 days and 45 days show decreasing in the ash content in the sample.



Ash content (%) of Guava jam during storage

#### Conclusion

It was found that quality of guava jam which was stored was in good conditions after the storage of 45 days and was acceptable. The packaging material plays a great role in the storage study period.

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