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Sensory evaluation of jam produced from guava (*Psidium guajava*)

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Abstract
The work evaluated the sensory quality of jam produced from Guava. The procurement of guava was done from Allahabad market and pulp was extracted from guava fruits. The pulp produced was mixed with prepared and standardized citric acid-sugar syrup, allowed to cook on constant boiling/stirring and the gelatinization temperature and the time were taken and recorded. The prepared jam was carefully poured in steam/ethanol sterilized jam bottles and cocked immediately the jam was allowed to cool. The cooled jam was served to panelist to compare sensory acceptability of the guava jam alongside mango jam. Sensory evaluation revealed significant difference in colour and aroma, texture and sweetness of samples tested. The study concludes that the guava jam is a nutritive source for the childrens to gain nutritive value by consumption of it.

Keywords: *Gelatinizaion, Sensory evaluation, nutritional value, guava,* organoleptic evaluation

1. 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 product 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 guava has following qualities

1. Guava (*Psidium guajava*), the apple of the tropics is one of the most common fruit in India.
2. It claims to be the fourth most important fruit in area and production after mango, banana and citrus.
3. It is now widely grown all over the tropics and subtropics and has become the most common of the newly introduced subtropical fruits in Israel.
4. Records suggest that it has been in cultivation in India since early 17th century and gradually become a crop of commercial significance.

Guava is quite hardy, prolific bearer and highly remunerative even without much care.
The aim and objective of this work is therefore to produce jam using guava and using statistical sensory evaluation to determine its organoleptic properties.

2. 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.

Sensory Evaluation
The judgment was made by rating product on a 9-point hedonic scale with corresponding descriptive term ranging from 9 “like extremely” to “dislike extremely” to determine the pleasurable and un pleasurable feel of Guava jam. 10 untrained panelists aged between 18-35 years participated in the consumer test conducted at the department of Food Process Engineering, Sam Higginbottom University of Agriculture, Technology and Sciences. The sensory quality attributes of the samples were colour, taste, flavor, sweetness, appearance, overall acceptability.

3. Results and Discussion
Organoleptic Evaluation of Guava Jam
Organoleptic quality parameters of a product assume vital role in anticipating the consumer response to the product. On the basis of organoleptic evaluation of Guava jam, 404 samples was selected as best sample. The percent of Guava was used separately in different proportions in jam with sugar, citric acid and pectin proportion. The formulated Guava based jam was further organoleptically analyzed for quality attributes like colour, flavour, taste, texture, appearance and overall acceptability. The data pertaining to organoleptic evaluation of Guava jam are presented in Table-1.1 The data pertaining to the sensory scores of appearances, colour, flavor, taste, texture and overall

acceptability of prepared Guava jam with different proportions is given in the Table-1.1. A significant difference was observed for the scores obtained for Guava jam for all the sensory parameters. Mean colour scores ranged from 8 to 9 with a mean of 8.2. The mean flavour scores ranged from 7.9 to 9, with mean of 7.9. The mean taste score ranged from 8.4 to 9, with a mean of 8.4. The texture scores ranged from 8.3 to 9, with mean 8.4. The mean overall acceptability scores ranged from 8.6 to 9, with mean of 8.6.

Table 1: Organoleptic characteristics of Guava Jam

SS Sample	Color	Taste	Flavour	Texture	Appearance	Over All
503	9	9	9	9	9	9
324	7.5	7.5	7.7	7.5	7.9	7.6
404	8	8.4	7.9	8.3	8.3	8.6
256	7.7	7.5	7.8	7.9	7.5	7.8

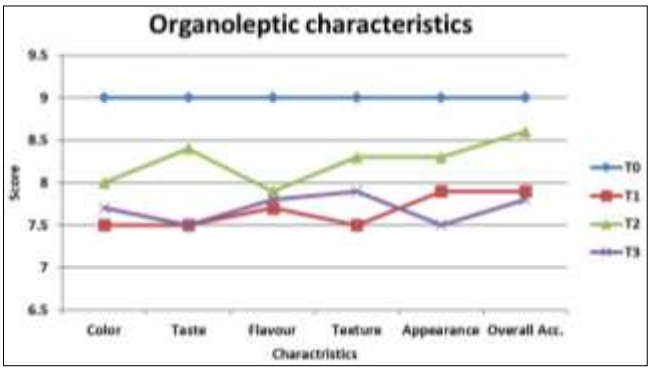

Fig 1: Organoleptic characteristics of Guava Jam

4. Conclusion

The results obtained from the study showed that guava (*Psidium guajava)* is a promising source of pectin which can be successfully applied in food gel system such as fruit jams, jellies and fillers etc. However, this tropical fruit wastes a lot due to underutilization and lack of knowledge regarding processing to farmers. If proper knowledge is gain by farmers then many post-harvest losses will be reduced. From the results obtained, the sample 404 was best in all sensory attributes. It is therefore recommended that use of jam produced from guava could be an innovation.

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