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Dr. Nivedita PathakSMS, Home Science KVK
Mahasamund, Chhattisgarh,
India**Dr. Saket Dubey**SMS, Home Science KVK
Mahasamund, Chhattisgarh,
India**Dr. Satish Verma**Senior Scientist & Head, KVK
Mahasamund, Chhattisgarh,
India

Sensory evaluation and nutritional composition of developed papaya-jam and papaya candy

Dr. Nivedita Pathak, Dr. Saket Dubey and Dr. Satish Verma

Abstract

A study evaluate the quality of two Papaya value added product vit jam and candy was carried out that KVK Mahasamund during 2019-20. The sensory evaluation and acceptability of the two recipes with respect to appearance, colour, aroma, taste, texture were conducted by 15 judges panel using hedonic score method. The result reveled that both the products were equally acceptable when the moderate acceptability was compared 66.66% but when the high acceptability was compared, papaya candy were more preferred 40.00% then papaya jam 26.66.

Keywords: Value addition, candy, jam, aroma

Introduction

Among the perishable commodities fruits are the essential ingredients in the human dietaries. They are high in nutritive value and make important nutritional contribution to human well-being and they are cheaper and better sources of protective foods. They are naturally low in fat, sodium, calories and have absolutely no cholesterol and are a significant source of several fundamental nutrients, including dietary fiber, vitamin C, folate (folic acid), potassium, phyto-nutrients and many anti-oxidants like phenols, flavonoids and anthocyanins. These compounds protect the body from oxidative stress and degenerative diseases by developing the capacity to fight against ailments’.

In different regions during certain parts of the year the perishable fruits are available as seasonal surplus and they create a glut in the market but in off-seasons they become scarce. If they are supplied in fresh or preserved form throughout the year for human consumption, the post-harvest losses can be minimized and more variety of wholesome nutritious and acceptable foods will be available to the people. Fruits like papaya is can be used to prepare a jam as they provide an abundant source of vitamins, minerals, fiber and antioxidants. Fruit jams are important in the diet of every age group as they provide quick boosts of energy with only half bout of calories.

Material and Methods

The study was carried out of KVK Mahasamund during 2019-20. KVK conducted In-service training for Anganwadi Karykarta on Value addition of Papaya. At the training 15 Aganbadi Karykarta from Bhalesar, Lafinkhurd, Mahasamund will prepared two product from papaya by learning by doing method.

**Corresponding Author:****Dr. Nivedita Pathak**SMS, Home Science KVK
Mahasamund, Chhattisgarh,
India**Fruit Selection**

Freshly mature papaya (Vt. Red Lady.) were Collected from the Farm of KVK Mahasamund.

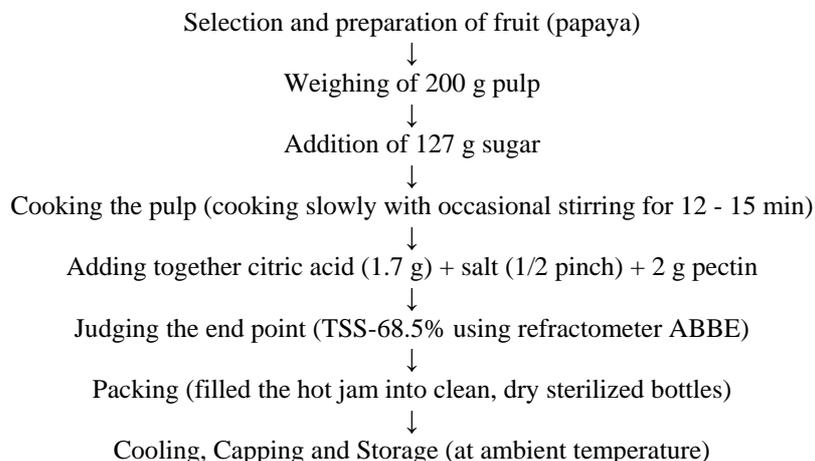
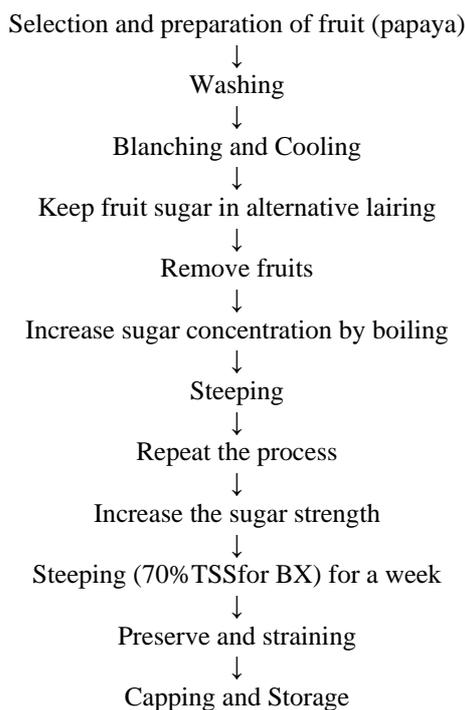
Fruit Preparation

Sorting and grading is essential to get suitable quality of fruit which was done by hand. The fruits were first thoroughly washed under running tap water to reduce soil, plant and debris load. Grading of fruit was done based on cleanliness, firmness, soundness, maturity, weight, color, size, shape, freedom from foreign matters, insect damage and mechanical injury. Undamaged fruits were selected with no symptoms of

visible discoloration and soaked in warm water at (80°C) for 2 min to reduce surface microbial load.

a) Papaya JAM (RED LADY.)

From the graded papaya the pulp was extracted manually. It was homogenized in a mixer to obtain fine pulp. Papaya Jam from Fig 1.

Flow Chart for Papaya-Jam Preparation**Papaya Candy (RED LADY.)****Fig 1.****Research Method**

The sensory evaluation and acceptability of these two product was conducted by 15 judges using the hedonic score method (Swaminathan 1995) and the scale ranged from 5 to 1 (Highly

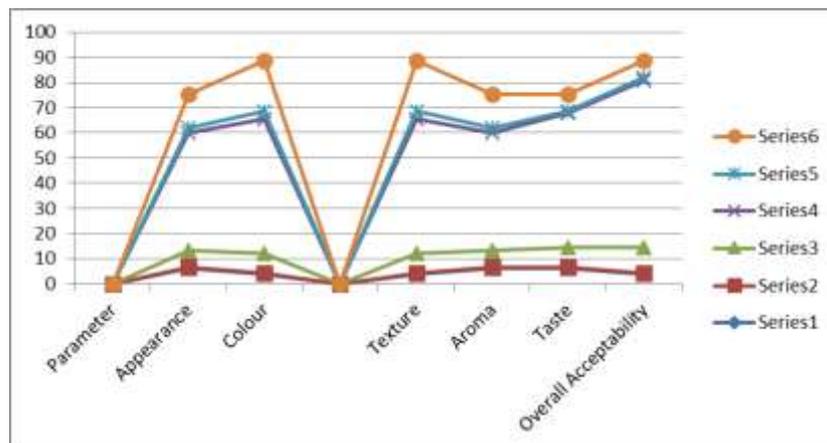
acceptable-5, Mordrate Acceptable-4, Acceptable-3, Less Acceptable-2 and Poorly acceptable-1) Percentage of acceptability was calculated.

Nutritive value of Papaya

Nutrient	Quantity
Water	88.83
Calorie	163kcal
Sodium	3mg
Magnesium	10 mg
potassium	357mg
Phosphorus	5mg
Iron	.10mg
calcium	24mg
Vitamin c	61.8mg
Vitamin B9	38mg
Vitamin B6	.1mg
Vitamin B2	.05mg
Vitamin A	328mg
Beta-carotene	.76 μ gm
sugar	5.9gm
carbohydrate	9.81 gm
Protein	.61gm
Fat	.14gm

Table 1: Organoleptic acceptability of Papaya jam

Parameter	Highly Acceptable	Moderately Acceptable	Acceptable	Less Acceptable	Poorly Acceptable					
Appearance	6	40%	7	46.66%	2	13.33%	-	-	-	-
Colour	4	26.66%	8	53.33%	3	20.00%	-	-	-	-
Texture	4	26.66%	8	53.33%	3	20.00%	-	-	-	-
Aroma	6	40.00%	7	46.66%	2	13.33%	-	-	-	-
Taste	6	40.00%	8	53.33%	1	6.66%	-	-	-	-
Overall Acceptability	4	26.66%	10	66.66%	1	6.66%	-	-	-	-

**Fig 2.****Table 2:** Organoleptic acceptability of Papaya Candy

Parameter	Highly Acceptable	Moderately Acceptable	Acceptable	Less Acceptable	Poorly Acceptable				
Appearance	7	46.66%	7	46.66%	1	6.66%	-	-	-
Colour	7	46.66%	8	53.33%	-	-	-	-	-
Texture	6	40.00%	7	46.66%	2	13.33%	-	-	-
Aroma	6	40.00%	8	53.33%	1	6.66%	-	-	-
Taste	5	33.33%	7	46.66%	3	20.00%	-	-	-
Overall Acceptability	6	40.00%	8	53.33%	1	6.66%	-	-	-

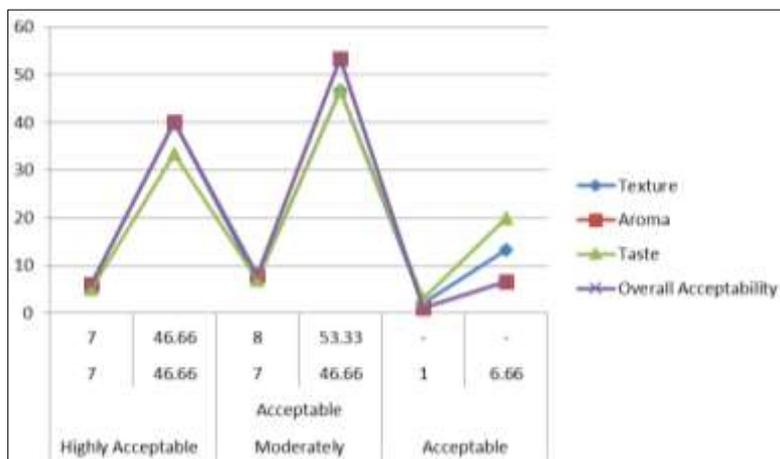


Fig 3.

Table 3: Comparison of acceptability between Jam and Candy

Parameter	Highly Acceptable	Moderately Acceptable	Acceptable	Less Acceptable	Poorly Acceptable
Papaya Jam	4 26.66%	10 66.66%	1 6.66%	-	-
Papaya Candy	6 40.00%	8 53.33%	1 6.66%	-	-

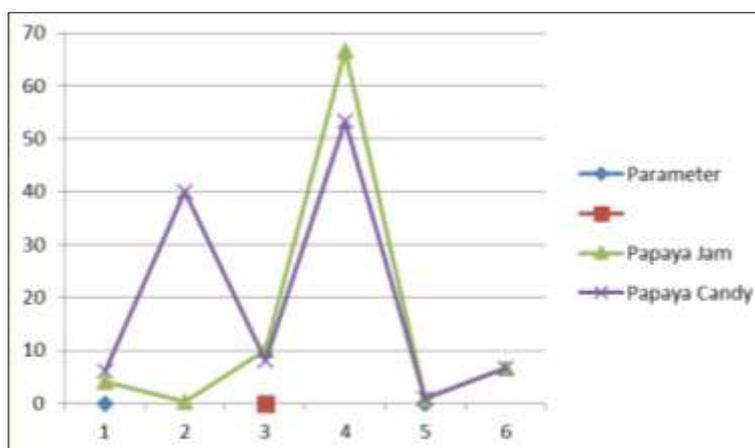


Fig 4.

Result and Discussion: Papaya fruit is mostly used in raw farm and vegetable. papaya candy is widely used for preservation. In this study value added product from papaya were prepared. Two types of value added product prepared from unripe papaya were Papaya Jam and Papaya Candy.

With regard to Papaya Jam from table (1) And Fig 2, 3 & 4. The sensory evaluation revealed that the appearance (46.00%), colour (53.33%), texture (53.33%), aroma (46.66%), taste (53.33%), were moderately acceptable. Overall moderately acceptability was (66.66%) followed by Overall highly acceptable was (26.66%).

Further sensory Evaluation of Papaya candy (table 2) revealed that the appearance (46.66%), colour (53.33%), texture (46.66%), Aroma (53.33%), taste (46.66%), were also moderately acceptable (66.66%) followed by highly acceptable (26.66%). The overall acceptability of papaya candy was moderately acceptable (53.33%) followed by highly acceptable (40.00%).

When the high acceptability of papaya Jam and candy compared the result revealed that the papaya candy were more acceptable than Papaya Jam.

Conclusion

From the results summarized above, it can be concluded that the papaya candy is more acceptable than Papaya jam due to its colour and appearance. Candy is used in bakery product and in confectionary etc. Therefore, the developed papaya

candy can be included in the daily diet of every age group which can definitely increase sensory attribute and nutrient intake by maintaining the good health.

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