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Physiochemical and Sensory Properties of Nectar Processed From Guava and Papaya

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Abstract

The aim of this investigation was to produce nectar from papaya and guava fruits and studies their physicochemical and sensorial analysis. The different percentages of Guava and papaya nectar were (50% Guava+ 50% papaya),Treatment-1,(75% papaya +25% guava)Treatment-2and (25% papaya+75%guava) Treatment-3.Analysis of nectar was conducted at zero time and during storage at ambient temperature up to six months.. Data analysis established that treatment -1 and treatment -3 had the maximum content of ascorbic acid by 109 and 136 mg/100g, respectively compared to treatment -2. Furthermore, bioactive components in guava pulp had the highest percentage compared to papaya pulp.Also nectars are an remarkable source of bioactive components.. It is a proper source of phenolic compounds (113.25 mg GAE/mg),flavonoid compounds(71.0 mg/100ml) and antioxidant activity (48.6%), respectively ,for treatment -3 .Processing and storage period exhibit notable effect on Physico-chemical parameters, especially, sugars, total soluble solids, PH value, total acidity, ascorbic acid, and the concentration of phytochemicals of nectars.. Statistical analysis related that treatments 1 and 2 were greatly established palatability during the storage period up to six months between adverse panelists. From all the previous results, it is probable applicable and economic to produce guava and papaya nectar blends.

Key words: Physicochemical analysis, nectars, Guava or papaya, bioactive components

INTRODUCTION

Guava (*Psidium guajava* L.) is one of the most common, greatest essential, and popular fruits not only in Egypt but also allover the world. It is very pleasant amongst the prevalent of customers closely in all countries, this may be due to its prevalent taste and excellent statistical analysis such as aroma and taste. Its used in numerous forms such as fresh , processed such as nectar, jam, compute, and puree. Egypt orders ninth amongst the world's top ten creators, with a yearly manufacture of about 1.351 million tones **[FAO,2017).** It is considered as super fruit rich in vitamins A and C in the pericarp, omega-3 and polyunsaturated fatty acids in seeds. Guava fruit contained above 4 times ascorbic acid compared to orange (220-230mg/100g). **Imungi *et al*. (1994)** reported that Guava is rich source for antioxidant , natural pigments such as carotenoids and polyphenols, charitable them comparatively great nutritive antioxidant rate amongst plant foods.

Papaya(*Carica papaya* L.) is reproduced astonishment of the tropics and subtropics fruits. It's a good source for papain, vegetable pepsin obtainable in good amount in unripe fruit. In addition ,Its an exceptional basis of vitamin A (2020 IU/100g) , thiamine, riboflavin and nicotinic acid **(Jain *et al*., 2011)** .This fruit has a high level of ascorbic acid , B-carotene and lycopene**. (Addai *et al*., 2013) .**Fresh papaya contained high amount of enzymes named papain and chymopapain that analyze proteins into amino acids and therefore helps digestion **(Othman., 2009).** Papaya fruit contain respectable taste , low acid gratified, hence; it can be used for mixing with additional fruits and for preparation of nutritional supplemented products **(Attri *et al* ., 2014)**.

Papaya and Guava remain vital tropical fruits and have right advantage above additional fruits by benefit of profitable nutritive value. Both of them restricted high levels of bioactive , phytochemicals such as antioxidants e.g polyphenols, flavonoids, carotenoids, and also rich source of vitamin C and A.. They are subject to significant losses after harvest due to their perishable nature.

The expansion of processed fruit products could help in not only increasing the utilization but also in improving public health by delivering antioxidant-rich fruits (**Kumar and Madhumathi 2017a)**

Fresh papaya and guava fruits obligate an imperfect shelf life. Consequently, it is essential towards consume this fruit to increase nutritious , processed health food like nectar ,raise its availability over an extended period and stabilize the price throughout the surplus period (**Kumar *et al*.,2017b)**.

Nectar is one of the stimulating drinks having, moderately preservatives, exceptional source of vitamins and minerals, so its used as a healthy drink . **Khurdiya and Sagar (1991)** described that guava nectar contained the maximum percent of vitamin c, pH value , non-reducing sugars and TSS%. . They also found that Total acidity ,TSS , total, and reducing sugar of guava nectar exhibited a cumulative movement throughout the development of storing up to 5 months at room temperature. Consequently, this education aimed to examine the option of nectar from papaya and guava fruits as well as to study their physicochemical and sensorial manufacture of analysis.

MATERIALS AND METHODS

1- MATERIALS:

1.1 Fruits

Guava (*Psidium guajava* L.) and Papaya (*Carica papaya* L.) were obtained from the H .R .I, Agriculture Research Center, Giza, Egypt.

1.2. **Chemicals**

All Chemicals used for chemical analysis were obtained Al-gomhorya Company.

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2- METHODS:

2.1. Preparation of Fresh fruits

Guava and Papaya fruits were washed away and left to drain, cut into splits, formerly seeds and kernels were removed and mechanically extracted using a blender.(BRAUN CombiMax 700). Each Fruits puree were divided into two parts:

- The first part was used to determine the physicochemical analysis.
- The second part was used to manufacture different fruit nectar blends

2.2. Preparation of nectars:

Nectars were prepared by diluting fruits puree with water plus addition calculated amount of sucrose to adjust total soluble solids (T.S.S. 18%) using a Refractometer. Potassium sorbate was added by allowed percentage (0.06%) as a preservative material, Prepared guava and papaya Nectars were mixed immediately by the different percentages as follows :

Treatment -1: 50% papaya +50%guava

Treatment -2: 75% papaya +25%guava

Treatment -3: 25% papaya +75%guava

Then filled into hot pasteurized crown flasks of 250 ml volume with air-tight corking. The flasks were treated in boiling water till the hotness of the product reached 100^0C and kept at ambient conditions conferring to the method designated by **choudhary *et al* (2008)** to conduct sensorial and physicochemical analysis at zero time and during storage up to 6months.

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Analytical Methods:

1-.Physicochemical analysis:
Determination of humidity, Ash, Total soluble solids (T.S.S.), total titratable acidity, pH value, crude fibers, sugars content conferring to the systems **A.O.A.C. (2012)**. Total carbohydrates were deliberate by difference , total carotenoids were determined according to **Askar and Treotow (1993).**

2-Total phenolic compounds were identified by **Kim *et al*., (2003)**
3- Total flavonoids were detected using a colorimetric test established by **Zhishen *et al*. (1999).**
4- Determination of antioxidant activity were detected by the methods of **Braca *et al*.,(2001)**

5- Sensory evaluation:
Twenty panelists were evaluated nectar blends, using a 9-point Hedonic scale **(Rosas-Nexticapa *et al*. 2005)**.

4- Statistical Analysis:
The results (mean ± standard deviation) were statistically analyzed by analysis of difference (ANOVA) using the arithmetical package (Costas) software (type 6.311) according to **Steel and Torrie (1980)**. To establish a significant difference as ignificant equal of P ≤0. 05 was applied.

RESULTS AND DISCUSSION
The effects of guava mixed with papaya nectars were studied by their physicochemical and statistical analysis tests. The assessment was complete on processed nectars. Thus, to identify the importance of the products, and their physicochemical composition were assessed as exposed in the following results.

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The chemical composition of fruits:

The fresh guava and papaya puree were analyzed for proximate analysis (Table 1).The results revealed that fresh guava pure contained the highest amount of total carbohydrates (15.32%), T. S. S. (10.5%) and total sugars (7.97%) compared to fresh papaya puree. These results were nearly the same as the outcomes of (**Ashaya *et al* ,2005 and Jain *et al* 2011**). Meanwhile, papaya puree has the lowest value of ascorbic acid (39 mg/100g). This might be due to the fact that ascorbic acid breaks down exposed to air and light during preparation**.(Otu *et a*l., 2013**).But high amount of ascorbic acid ,total phenolic, flavonoids and antioxidant activity of guava puree were observed (270,335.4,210.5 and 83.4 mg/100g).These results were nearly agreed with those reported by **Saroja (2015); Ellong *et al*., (2015), and Addai *et al*.(2013).** The results of chemical analysis revealed that fresh guava puree is an excellent source for ascorbic acid, phenols, flavonoids and antioxidant activity compared with those of papaya puree.

Table(1):Chemical composition of fresh Papaya and Guava puree fruits (on afresh weight basis)

Constituents	Guava	Papaya
Moisture%	82.00	87.00
Ash%	0.73	0.72
Crude Fibers%	1.36	0.78
Total carbohydrates%	15.32	11.47
Total soluble solids (TSS %)	10.50	9.5
Total Sugars %	7.97	7.46
Reducing Sugars%	3.78	3.96
Non-Reducing Sugars%	4.19	3.50
PH value	3.8	4.1
Total acidity (as citric acid)%	0.50	0.46
Ascorbic acid mg/100g	270.0	39.0
Total Phenols mg/100g	335.40	133.61
Total Flavonoids mg/100g	210.50	80.0
Total Carotenoids mg/100g	0.478	1.473
Antioxidant activity (DPPH%)	83.4	74.26

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The chemical composition of nectars:

Data in Table (2) revealed the chemical composition of guava and papaya nectar blends. Results showed a higher percentage of total and non reducing sugars in controls and all nectar treatments than those of reducing sugars. This results matched with what was recorded by **Choudhary *et al*., (2008).** Data also exhibited that guava nectar (control 1) had the highest percentage of Ascorbic acid and total carbohydrate by (162mg/100ml and 13.79%) compared to papaya nectar (control 2) (55.8 mg\100 ml and 10.46 outcomes show also that blends nectar (treatment 3) are rich in ascorbic acid, where it accounted (136 mg/100ml) followed by treatment 1 (109 mg/100ml), treatment-2. (82.35 mg/100ml). It could be concluded that both treatments (3) and (2) have highest contents of ascorbic acid content.

Table(2):Chemical composition of Papaya and Guava nectar blends (on afresh weight basis).

Samples contents	Control1	Control2	Treatment1	Treatment2	Treatment3
Ash%	0.73	0.71	0.72	0.69	0.71
Crude Fiber%	1.38	0.79	1.08	1.03	1.30
Total carbohydrates%	13.79	10.46	12.58	12.04	12.09
Total Sugars %	15.0	15.6	15.3	15.9	15.1
Reducing Sugars%	5	5.3	4.7	4.8	5.0
Non-Reducing Sugars%	10	10.3	10.6	10.2	10.1
Total soluble solids (TSS) %	18	18	18	18	18
PH value	3.8	4.0	4.2	4.1	4.3
Total acidity (as citric acid) %	0.90	0.80	0.80	0.96	0.96
Ascorbic acid mg/100ml	162	55.8	109	82.35	136

Control 1:100% guava nectar, **Control 2**:100% papaya nectar, **Treatment 1**: (50% papaya +50% guava), **Treatment 2**: (75% papaya+ 25 % guava) and **Treatment 3**: (25% papaya +75% guava)

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Bioactive compounds of nectar fruits:

The differences between total phenols, flavonoids, carotenoids and antioxidant activity (DPPH%) were observed among the different percentages of treated nectar blends (Table 3). Results showed that guava nectar (control 1)are rich in total phenols ,where it accounted (134mg/100ml)followed by treatment 3 (1113 mg/100 ml), control 2 (53.44 mg/100 ml). The exchanges, especially on phenolic compounds were possibly due to the transformation of phenolic compounds into condensed forms that possessed slightly different chemical properties. These differences may be due to variations in the ratio of blends **(Cheynier,. 2005 and Dyab *et al*., 2015)**. Data as curtained that guava nectar (control 1) has a slightly high percentage of total flavonoids and DPPH content (84.2 mg/100 ml and 50.04%, respectively) when compared with papaya nectar (control 2) that had 32.02 mg/100 ml and 44.56 %, respectively) **.** Antioxidant constituents of the plant materials like fruits act as radical scavengers and helps in converting the radicals to less reactive species. A variety of free radical scavenging antioxidants is found in dietary sources such as fruits (papaya and guava), vegetables and tea, etc (**Arshiya, 2013)** It could be concluded that Papaya 25 % + Guava 75% (treatment-3) had the highest bioactive components compared with the other treatments. Processing exhibit a notable effect on the concentration of phytochemicals, especially, phenols, flavonoids, carotenoids and antioxidants of fruits **Tanwar *et al*., (2014)**, **Ellong *et al*., (2015).**

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Table (3):Effect of blended nectars on bioactive compounds of papaya and guava (on afresh weight basis).

Products	Total phenols mg\100ml	Total flavonoids mg\100ml	Total carotenoids mg\100ml	DPPH%
Control-1	134.16	84.2	0.2868	50.04
Control-2	53.44	32.0	0.4360	44.56
Treatment-1	94.0	58.0	0.5830	47.0
Treatment-2	65.80	45.0	0.7435	45.90
Treatment-3	113.25	71.0	0.8838	48.60

Control1:100% guava nectar, **Control 2**: 100 % papaya nectar, **Treatment 1**: (50% papaya+ 50% guava), **Treatment 2**: (75% papaya +25% guava) and **Treatment 3**: (25% papaya+ 75% guava)

Effect of diverse ratios of papaya and guava nectar on some chemical compositions during storage up to 6 months at room temperature (25^{o}C±5).

Physicochemical analyses were done at zero time of storage period up to six months at room temperature (25^{o}C+5).It was experiential from Table 4 that , total soluble solids (T.S.S), acidity, ascorbic acid of fruits nectar reduced during six months of storage. T.S.S% content were decreased by1.38%, 1.66%, 2.22%, 1.66%, and 1.11% respectively for all blended after six months of storage. Regards the levels of T.S.S in different blends, there was no big difference when the storage for six months**. (Wisal *et al*., 2014).** From the results in the same table, it could also be observed that the storage period affected the vitamin C content of guava and papaya nectars. The total vitamin C was decreased by 20.07 %, 21%, 20%, 20.09%, and 19.85%**,** respectively after six months of storage. This decrease potency outstanding to the oxidation of vitamin C into dehydro vitamin C.

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Those sufferers of vitamin C was also recognized to the result of treating, storing time, and contact to bright. Those discoveries hashing agreement by those **Murari and Verma (1989)** reported.

On the other hand, data ascertained that slightly increased pH value and decreased acidity during storage dated up to 6months. The changes in total acidity as citric acid of guava and papaya products were 3.75%, 3.33%,3.75%, 3.13%, and 3.13% of different blended guava and papaya nectar These results are in arrangement with those of **(Kumar *et al*., 2017a)**.

Thus it could be concluded that the Processing and storage dated exhibition distinguished effect on Physico-chemical parameters, especially, T.S.S, PH value, total acidity, and ascorbic acid of nectars.

Table (4) Effect of diverse ratios of papaya and guava nectar on some Physico-chemical parameters throughout storing up to 6 months at(25^{o}C±5).

Storage(month)	Products				
	Control1	Control2	Treatment1	Treatment2	Treatment3
Total soluble solids (T.S.S)%					
0	18.0	18.0	18.0	18.0	18.0
3	17.9	17.8	17.85	17.81	17.9
6	17.7	17.75	17.0	17.7	17.8
Changes%	1.66	1.38	5.55	1.66	1.11
Ascorbic acid mg/100ml					
0	162	55.8	109	82.35	130
3	150	50.2	100	75.3	125.8
6	128	44.6	87.2	65.8	109
Changes%	20.98	20.07	20	20.09	16.15
pHvalue					
0	3.8	4.0	4.2	4.1	4.3
3	3.8	4.1	4.3	4.2	4.3
6	3.9	4.3	4.3	4.2	4.4
Changes%	2.63	7.50	2.38	2.43	2.32
Acidity%					
0	**0.9**	**0.8**	**0.8**	**0.9**	**0.96**
3	**0.8**	**90.79**	**0.79**	**0.95**	**0.95**
6	**0.87**	**0.77**	**0.77**	**0.93**	**0.93**
Changes%	**3.33**	**3.75**	**3.75**	**3.33**	**3.22**

Control1:100% guava nectar, **Control 2**: 100 % papaya nectar, **Treatment 1**: (50% papaya+ 50% guava), **Treatment 2**: (75% papaya +25% guava) and **Treatment 3**: (25% papaya+ 75% guava)

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The information of changes in total, reducing and non-reducing sugars contents after six months of storage were noticed in **Table (5).** Results showed a minor reduction in total sugars content throughout storing. This decrease strength be correlated to significantly browning response between free amino acids and reducing sugars. Meanwhile reducing sugar increased during storage up to six months (25^{o}C±5).

Table (5).Effect of diverse ratios of papaya and guava nectar on Sugars content throughout storing up to 6 months at(25^{o}C±5).

Storage months	Control1	Control 2	Treatment 1	Treatment 2	Treatment 3
Total Sugars %					
0	15.0	15.6	15.3	15.9	15.1
3	14.0	14.6	14.2	14.9	14
6	12.9	13.5	13.3	13.8	13.1
Changes%	14	13.46	13.07	13.07	13.24
Reducing Sugars %)					
0	5.0	5.3	4.7	4.8	5.0
3	5.5	6.2	5.5	5.7	5.7
6	6.2	6.8	6	6.1	6.3
Changes%	24	28.30	27.65	27.08	26
Non-Reducing Sugars%					
0	10	10.3	10.6	10.2	10.1
3	9.0	9.2	9.5	9.2	9.1
6	7.9	8.2	8.4	8.2	8.0
Changes%	21	20.38	20.75	19.61	20.79

Control1: 100% guava nectar, **Control2**: 100% papaya nectar, **Treatment1**: (50% papaya+ 50% guava), **Treatment2** (75% papaya +25% guava) and**Treatment3**: (25% papaya+75% guava)

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The information of changes in total phenolic, flavonoids, carotenoids, and antioxidant activity after six months of storing were assessed in **Table (6).** Results showed a slight reduction in phytochemicals, especially, phenols, flavonoids, carotenoids, and antioxidants contents throughout storing up to six months (28-30% in average). These results are in arrangement with those of **Mokhtar *et al*., (2020)** and **Kumar *et al*., (2017b)**. This reduction strength be correlated to polyphenols condensation in to brown pigments **Muzaffar *et al*.,(2017)**.Furthermore, the loss of antioxidants could also be related to additional issues such as thermal degradation, oxidation or polymerization of phenolic compounds, damage of antioxidant enzyme activities**(Kaur and Kapoor,2001 and Ling*etal*.,2005).**It could be decided that the processing and storing dated exhibition distinguished effects on phenols, flavonoids, carotenoids, and antioxidants of nectars.

Table (6). Effect of diverse ratios of papaya and guava nectars on phenolic, flavonoid, carotenoids, and antioxidant activity throughout storing up to 6 months at(25^{o}C±5).

Products	Total phenols				Total flavonoids			
	Storage period(month)				Storage period(month)			
	0	3	6	Change%	0	3	6	Change%
Control1	134.16	124.77	93.87	30.00	84.20	78.31	58.94	30.00
Control2	53.44	49.7	37.41	30.00	32.00	29.76	23.04	28.00
Treatment1	94.00	87.42	66.5	29.25	58.00	53.94	41.76	28
Treatment2	65.80	61.19	47.38	28.00	45.00	41.85	32.40	28.00
Treatment3	113.25	105.32	79.28	30.00	71.00	66.03	49.70	30.00
	Total carotenoids				Antioxidant activity			
Control1	0.287	0.267	0.207	28.00	50.04	46.54	35.03	30.00
Control2	0.884	0.822	0.619	30.00	44.56	41.44	31.19	30.00
Treatment1	0.583	0.542	0.414	29.00	47.00	43.71	33.40	28.00
Treatment2	0.744	0.692	0.535	28.00	45.90	42.69	32.59	29.00
Treatment3	0.436	0.406	0.305	30.00	48.60	45.19	34.02	30.00

Control1: 100% guava nectar, **Control2**: 100% papaya nectar, **Treatment1**: (50% papaya+ 50% guava), **Treatment2**: (75% papaya +25 % guava) and **Treatment3**: (25% papaya+ 75% guava)

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Effect of diverse ratios of papaya and guava nectar on sensory evaluation throughout storing up to 6 months at(25°C±5).

Organoleptic evaluation could be reflected as one of the greatest essential characteristics of the nectar blend method since it reveals the consumer/preference. The numerical study statistics for the sensual assessment of altered blended guava and papaya nectar have been presented in **Table (7).** The different blending ratios exhibited significant influence on the sensory score throughout the storage period up to 6 months.

Based on rating for organoleptic superiority characteristics of blended nectars, it could be illustrated at the maximum grade values then on-significant change ($p \leq 0.05$) in taste and color, were shown in control-1, treatment-1, and 2 compared with control- 2 and treatment -3 at zero time of storage. As for the odor, appearance, there are non-significant changes ($p \leq 0.05$) in Zero period of storing between all treatments**.** Results showed also that noteworthy changes detected for all treatments general palatability at zero time of storage. The organoleptic score for all sensory tests of nectar was significantly decreased during the storage up to six months. These results are in agreement with those reported by **Bal *et al*., (2014).** Normally, those results indicated that all treatments had high palatability specially control1, treatments 1 and 2

Hence, all the outcomes from the sensual assessment concluded that it was satisfactory to achieve guava nectar blended with papaya nectars specially by the treatment 1 and 2.

Table(7)Effect of diverse ratios of papaya and guava nectar on sensory evaluation during storage at (25°C±5).

Storage(month)	Products					LSD at ≤0.05
	Control1	Control2	Treatment1	Treatment2	Treatment3	
Taste						
0	8.3^{a}	$6.8d^{efg}$	$.05^{ab}$	7.75^{abc}	7.0^{cde}	0.523
3	7.5^{bcd}	6.15^{f}	7.8^{ab}	6.6^{ef}	7.45^{bcd}	
6	7.4^{bcde}	6.15^{f}	6.95^{ab}	6.15^{f}	6.15^{f}	
Color						
0	9.1^{ab}	7.4^{d}	8.7^{abc}	8.6^{abc}	8.4^{bcd}	

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3	8.2^{cde}	8.3^{cde}	8.0^{cde}	7.8^{cde}	7.6^{de}	0.59
6	8.1^{cde}	7.4^{e}	7.8^{cde}	7.6^{de}	7.6^{de}	
Odor						
0	8.7^{a}	8.8^{a}	8.2^{abc}	8.0^{abc}	8.6^{ab}	0.69
3	7.75^{abc}	8.15^{abc}	8.15^{abc}	7.8^{abc}	7.95^{abc}	
6	8.0^{abc}	7.6^{bc}	7.45^{c}	7.4^{c}	7.3^{c}	
Appearance						
0	8.7^{ab}	9.1^{a}	8.5^{ab}	8.4^{abc}	8.7^{ab}	0.55
3	8.5^{ab}	7.9^{bcd}	8.2^{bc}	8.1^{bcd}	8.6^{ab}	
6	8.2^{bcd}	7.5^{d}	8.1^{bcd}	7.6^{cd}	7.9^{bcd}	
Overall palatability						
0	8.68^{a}	8.13^{bc}	8.24^{b}	8.14^{bc}	8.03^{bcd}	0.29
3	8.10^{bc}	7.73^{cde}	8.04^{bcd}	7.61^{de}	7.93^{bcde}	
6	7.81^{bcde}	7.55^{e}	7.73^{cde}	7.53^{e}	7.20^{f}	

Means with in showing the similar letter sari not significantly diverse at (P≤0.05) **Control1**:100% guava nectar, **Control2**: 100% papaya nectar, **Treatment1**: (50% papaya+50% guava), **Treatment2**: (75% papaya +25 % guava)and **Treatment3**: (25% papaya+75% guava)

CONCLUSON

From the obtained results it could be clearly conclude that best ratios from mixing were papaya 50 % and guava50%, plus 75% guava +25% papaya. Furthered more, Papaya 25%+ Guava 75% (treatment-3) had the highest bioactive component compared with the other treatments throughout the storing period up to six months at room temperature. Thus, mixed nectars can be careful a promising natural product that are rich in carotenoids, phenols, flavonoids and antioxidant activity. Sensual assessment concluded that it was satisfactory to achieve guava nectar blended with papaya nectars.

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REFRANCES

1. **Addai, Z. R. ; Abdullah, A. and Abd Mutalib, S. (2013).** Effect of extraction solvents on the phenols content and antioxidant properties of two papaya cultivars. Journal of Medicinal Plants Research, 7 (47): 3354-3359.

2. **AOAC (2012).** Official Methods of Analysis Association of Official Analytical Chemists International, 19th ed., Maryland, USA.

3. **Arshiya, S.(2013):** The antioxidant effect of certain fruits: A review. Journal of pharmaceutical sciences and research.; 5: 265-268.

4. **Ashaye, O.A., Babalola1S, O., Babalola,A. O., AinaJ.O. AnFasoyiro, S.B. (2005).** Chemical and Organoleptic Characterization of Pawpaw and Guava Leathers, World Journal of Agricultural Sciences 1 (1):50-51.

5. **Askar, A.A, and Treotow, H. (1993).Quality assurance in tropical fruit processing .**Springer-Verlage, Berlin, Heidelberg, New York, London, Paris.

6. **Attri, S.; Dhiman, A.K.; Kaushal, M. and Sharma R.(2014).** Development and storage stability of papaya (*Carica papayaL.*) to freehand leather. International Journal of arm Sci., 4(3): 117-125.

7. **Bal, L. M.; Ahmed, T.; Senapati, A.K., and Pandit, P.S. (2014).** Evaluation of Quality Attributes During Storage of Guava Nectar Cv. Lalit from Different Pulp and TSS Ratio. J. Food ProcessTechnol.,5:5.

8. **Braca, A.; De Tommasi, N.; Di Bari, L.; Pizza, C.; Politi, M, and Morelli, I. (2001). Antioxidant** Principles from Bauhiniater apotensis. Journal of Natural Products, 4: 892–895.

9. **Cheynier, V. (2005).** Polyphenols in foods are more complex than often thought. American. Of ClinicalNutrition,81:223S–229S.

10. **Choudhary, M.L.; Dikshit, S.N.; Shukla, N. and Saxena, R.R. (2008).** Evaluation of guava (*Psidium guajava*L.) varieties and standardization of recipe or nectar preparation. J. hort. Sci., 3(2): 11-13.

11. **Dyab, A.S.; Aly, A.M. and Matuk, H.I. (2015)**. Enhancement and Evaluation of Peppermint (*Mentha Piperita*L.) Beverage. International Journal of Life Sciences Research, 3 (1): 175-185.

12. **Ellong, E.N.; Billard, C.; Adenet, S. and Rochefort, K. (2015).** Polyphenols, Carotenoids, Vitamin C Content in Tropical Fruits and Vegetables and Impact of Processing Methods Food and Nutrition Sci., 299-313.

13. **FAOSTAT (2017):** Agricultural data, agricultural production, crop primary. http://www. fao. org/faostat/en/#data/QC

14. **Imungi, J. K.; Schefield, H. and Saint-Hilslare, U. (1994).** Physical-chemical changes during extraction and clarification of guava juice. Chemistry and Tech., 7:33-41.

15. **Jain,P.K.; Priyanka, J. and Nema, K.P.(2011).**Quality of guava and papaya fruit pulp as influenced by blending ratio and storage period. American Journal of Food Tech.,(6): 507-512.

16. **Kaur, C. and Kapoor, H. C. (2001):** Antioxidants in fruits and vegetables-the millennium 'sheath. International Journal of Food Science and Technology 36 (7):703-725

17. **Khurdiya D. S and Sagar V.R (1991)** Note on processing and storage of guava nectar. Indian J Hort 48:19 -21.

18. **Kim, D.O.; Chun, O.K.; Kim, Y.J.; Moon, H.Y, and Lee, C.Y. (2003).** Quantification of polyphenols and their antioxidant capacity in fresh plums. J. Agr. Food Chem., 51:509–515.

19. **Kumar, A.L. and Madhumathic, E. (2017a). Effect of fortification on nutritional and sensory** quality of papaya and guava fruit bar. International Journal of Agriculture Sciences. Vol Page No 4356-4362

20. **Kumar, A. L.; Madhumathi, C.; Sadarunnisa, S. and Latha, P. (2017b):** Quality evaluation and storage study of papaya guava fruit bar Journal of Pharmacognosy and Photochemistry, (4): 2082-2087.

21. **Ling, H. I., Birch, J. and Lim, M. (2005):** The glass transition approach to determination of drying protocols for colour stability in dehydrated pear slices. International Journal of Food Science and Technology 40 (9):921-927.

22. **Mokhtar, S. M, and Ibrahim, M.A.I (2020):** Physicochemical, Antioxidant and Sensorial Properties of Pasteurized Guava Nectar Incorporated with Pomegranate Peel and Guava Leaf Extracts World Journal of Food Science and Technology; 4 (1): 8-16

ISSN: 2735-5381 VOLUME 3, ISSUE 1, 2022, 33 – 51. www.egyptfuture.org/ojs/

23. **Murari K, Verma (1989)** Studies on the effect of varieties and pulp extraction methods on the quality of guava nectar. Indian FoodPacker43: 11-15.

24. **Muzaffar, K., G. A. Nayik, A. Gull, and P. Kumar (2017):** Changes in quality characteristics of pomegranate juice concentrate during refrigerated storage. Journal of Postharvest Technology 5, 16-21.

25. **Othman,O. C. (2009).** Physical and chemical composition of storage-ripened papaya (*Carica papaya* L.) fruits of easterntanzania Tanz. J.Sci., 35:47-55.

26. **Otu, P., Saalia, F. and Amankwa, E. (2013).** Optimizing Acceptability of Fresh Moringa oleifera Beverage, Food Science and Quality Management, Vol.21: 34-39.

27. **Rosas-Nexticapa, M., O. Angulo and M. O. Mahony (2005).** How well does the 9-point Hedonicscale predict purchase frequency? J. Sensory Studies, 20:313-331.

28. **Saroja, P. M. (2015).** Antioxidants in two varieties of Guava and Papaya fruits from Agastees waram Taluk, Kanyakumari District: a Comparative Study Int. J. Pure App. Biosci. 3(2): 305-310.

29. **Steel, R. G. and Torrie, T.H. (1980)**. Principles and procedures of statistics. Biometrical approach. Mc Graw Hill Book Comp., Inc.,New York,USA.

30. **Tanwar, B.; Andallu, B. and Chandel, S. (2014).** In fluence of Processing on Physicochemical and Nutritional Composition of *Psidium Guajava*L. (Guava) Products International Journal of Agriculture and Food Science Tech., 5 (2): 47-54.

31. **Wisal, S.; Mashwani, M. A. and Noor, S. (2014).** Storage Studies of Strawberry Juice with TSS of 7.5 and 20.5^{o}Brix Preserved with Sodium Benzoate and Potassium Sorbate Stored at Ambient Temperature. International Journal of Basic & Applied Sciences Vol. 14 (1): PageNo36-43.

32. **Zhishen, J.; Mengcheng, T, and Jianming, W. (1999).**The determination of flavonoid contents in mulberry and their scavenging effects on superoxide radicals. Food Chem., 4:555-55.

ISSN: 2735-5381 VOLUME 3, ISSUE 1, 2022, 33 – 51. www.egyptfuture.org/ojs/