Zagazig J. Agric. Res., Vol. 46 No. (2) 2019 419-429

Food, Dairy and Home Economic Research

http:/www.journals.zu.edu.eg/journalDisplay.aspx?Journalld=1&queryType=Master

INNOVATION OF JAM FROM GURMA MELON PULP AS UN TRADITIONAL SOURCE

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Received: 20/01/2019 ; Accepted: 18/02/2019

ABSTRACT: Gurma melon (Nubian or Seed melon) *Citrullus lantus* var. colocynthoides, became an important crop in Egypt. It was cultivated for seeds only, while the residue of fruits are removed as waste. The main objective of the study is to investigate the possibility of utilization Gurma melon pulp in an economic nutrient food products as jam. The obtained results declared that Gurma melon wastes which represented about 95% of crop contained moisture 94.55%, protein 0.84%, fat 0.19%, crude fiber 0.12%, mineral matter 0.21, TSS 4.32° Brix and acidity 0.18%. Gurma melon pulp were used to prepare both flavored jam by adding up to 1.5% of cinnamon and mixed jam by substituting up to 30% of fig with Gurma melon. All the jam samples were stored in sterilized glass jars at room temperature for 6 months and the physicochemical and organoleptic characteristics were studied. The results indicated that high acceptance jam could be processed from Gurma melon pulp plain or flavored by 1% cinnamon. Also Gurma pulp up to 20% could incorporated in blends with fig fruits for producing good quality fig-melon mixed jam.

Key words: Gurma melon, *Citrullus lantus*, Jam, Cinnamon.

INTRODUCTION

Gurma melon (*Citrullus lantus* var. colocynthoides) is one species of the cucurbitaceae family. It is an ancestor type of the cultivated watermelon **(Ziyada and Elhussien, 2008),** sometimes, known as Nubian melon or seed melon. It cultivated from early times in Egypt, possibly from the Ancient Egypt **(Manniche, 1989; El-Shabrawy and Hatem, 2008)**.

Green parts of the plant are used as animal feeds, the fruits pulp are creamy in colour and extremely slight sweet taste. The seeds consider to be the economic part of Gurma melon **(Badifu and Ogunsua, 1991; Korish, 2015).** Also **(Ibrahim, 2007)** suggested that Nubian melon can be used as a source of protein supplement to ruminant animals.

The economic importance of Gurma melon has recently increased, because its production exceeds the domestic consumption, hence, Egypt became able to export large quantities of its seeds. Moreover, its importance is due to its tolerance to drought and salinity; So it is a good crop for the new reclaimed lands **(El-Shabrawy and Hatem, 2008)**. It has been widely cultivated especially in northern region of Egypt due to its less water requirements **(Soliman *et al.,* 1985; Abou El-Magd *et al.,* 2006)**.

Within the last years Gurma melon has become an important crop able to export large quantities of seeds to the Arabian countries **(Ibrahim, 2007).** Gurma melon represents a significant amount of total Egyptian agricultural exports **(Abo-Haded, 2003)**. Gurma melon occupied about 223113 faddans in summer season in 2015 from them about 200406 fad., old land and 22707 fad., of reclaimed land

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which yielded 115201 tons with an average yield of 516 kg/fad., **(EMALR, 2015)**. However, Egypt is one the five largest watermelon producer in the world. It produces approximately 1.7 % from globally watermelon production; 1719 thousand metric tons were harvested from around 60554 ha with an average of 31.29 ton/ha **(FAOSTAT, 2013)**. The seeds were only utilized while the total deseeded fruits are thrown into nature as waste, causing environmental problems. This waste can be used as a raw material for the production of useful biomaterials and intermediate chemical products **(Abdelhady *et al.*, 2014; Korish, 2015)**.

Jams are one of the most popular food products because of their low cost, all year long availability and organoleptic properties. Jam is prepared by boiling the fruit pulp with sufficient quantity of sugar to a reasonable thick consistency. The concentrated pulp is then cooled and packed in a well sterilized bottles secured with air- tight cap to ensure a longer shelf-life of the product (**Gakowska *et al.*, 2010)**.

Cinnamon is rich in potassium, sodium, calcium, iron and magnesium, saturated, polyunsaturated, monounsaturated fats, carbohydrates, fibers, sugar, protein, vitamin B12, B6 and vitamin C (**Iancu, 2017**). Furthermore, cinnamon has strong antimicrobial and preservative activity (**Vidanagamagea, *et al.* 2016**). As a consequence of its nutritional and functional properties, cinnamon is extensively used in the production of various foods, predominantly in the kitchen as a spice and a flavoring material. It is also used in various dessert recipes such as apple pie, donuts and cinnamon buns, spicy candy, tea, hot cocoa, liqueur, varieties of thick soups (**Soliman and Badeaa, 2002**).

Nevertheless, very little studies have been conducted to utilize from Gurma melon (pulp). Therefore, the objective of this research was to evaluation the chemical composition of Gurma melon pulp and quality parameters of jam prepared from Gurma melon flavoured by cinnamon fortified with fig during storage at room temperature for 6 months.

MATERIALS AND METHODS

Materials

Gurma melon fruits (*Citrullus lanatus* var. Colocynthoides) and Fig (*Ficus carica* L.) fruits were obtained from local farm in Kafr Saqr, Sharkia Governorate, Egypt.

White sucrose, cinnamon powder were purchased from the local market in Mansoura, Egypt.

Citrus pectin, citric acid and sodium benzoate of food grade were obtained from El-Gomhoria Medicine and Chemical Company, Egypt.

Chemicals used in this study were of analytical grade and purchased from El-Gomhoria Co., Egypt.

Methods

Preparation of Gurma Melon Pulp

Ten fruits of Gurma melon (about 30 kg) were washed and cut into halves to remove peels and seeds using a stainless steel knife, chopped into small pieces and ground with blender "Moulinex model 570, France". The mashed product was sieved through a fine screen to separate the residue of seeds and other fibrous matter then subjected to heating at 90ºC for 5 min and left for cooling. The pulp was filled in polyethylene bags kept frozen at -18ºC until using in jam making.

Jam Preparation

Flavoured Gurma watermelon jam

Gurma melon jam was prepared according to the **ES (2005)** without adding any pectin. Different Gurma melon jams were prepared using Gurma melon pulp and different ratios of cinnamon powder (0, 0.5, 1 and 1.5%). Mixtures of 0.9 Kg of Gurma melon pulp and 1.1 Kg of sugar were cooked in an open pan with continues manual stirring. The amount of cinnamon powder (5, 10, 15 g) was mixed with about 50 g of sugar and added at 55°Brix. While 4 g of citric acid and 150 ppm of sodium benzoate were solved in small amount of water and added at 60° Brix. The mixtures were heated till total soluble solids reached to 65° Brix. The hot jams

were filled into sterilized glass jars (400 ml) then tightly closed and stored at room temperature (**Souad *et al.*, 2012**).

Fig puree preparation

Selected fig fruits were cleaned and washed, the stems were carefully removed by stainless knife and washed by tap water then pureed using an electrical mixer blender and screened by a piece of muslin cloth to obtain homogenized puree.

Preparation of jam from fig and gurma melon pulp blends

Fig jam was processed according to the **ES (2005)**. Different fig jams were prepared using different ratios of Gurma melon pulp and other materials, listed in Table 1. The mixtures of Fig, Gurma melon pulp and sugar were cooked in an open pan with continues manual stirring. The amount of pectin mixed was about 50 g of sugar added at 55°Brix, while citric acid and 150 ppm of sodium benzoate were solved in small amount of water and added at 60° Brix. The mixtures were heated till total soluble solids reached to 65° Brix. The hot jams were filled into glass jars (400 ml) then tightly closed and stored at room temperature (**Souad *et al.*, 2012**).

Analytical Methods

Physical properties

Viscosity

The viscosity of the treated samples was periodically measured at 27–30^{o}C using spindle No. 4 of digital Brookfield (DVI) Viscometer at 60 rpm and expressed at 20^{o}C **Sreenath *et al.* (1995)**.

Colour measurement

The colour of samples were measured using Hunter lab (Model CR- 400, Konica Minolta Sensing, Inc., Osaka, Japan) based on three colour coordinates: L* (Lightness), a* (redness / greenness), b* (yellowness / blueness). The measurement for each sample was replicated and the average value was recorded for each colour parameter. To prepare the samples for colour measurement, jam samples were poured into a 35-mm Petri dish and carefully covered with a Saran Wrap transparent film which was carefully pressed against surface to remove air bubbles as reported by **Abonyi *et al.* (2001)**. Colour of the samples was measured by contacting the colour meter with the film-covered sample. Measurements were taken at 5 different locations on the sample.

Chemical analysis

Moisture, ash, crude protein, pectin and crude lipids, Total soluble solids (TSS), acidity, pH value and ascorbic acid content were determined according to the methods reported by the **AOAC (2005)**.

Mineral contents were determined according to the method of **AOAC (2005)** using atomic absorption spectrophotometery (ICAP 6500 Duo, England Multi-element certified standard solution 100 mg/l Merk, Germany) at the Central Laboratory, Faculty of Agriculture, Zagazig University, Egypt.

Sensory Evaluation

All jam samples were evaluated by 13 panellists from postgraduate students and staff members, Department of Food Science, Faculty of Agriculture, Zagazig University, and Food Technology Research Institute (FTRI), Agriculture Research Center (ARC). Each judge was asked to evaluate jam samples for flavour, taste, colour, texture on the basis of preference tests using a hedonic scale from 10 being the most liked, and 1 the most disliked according to **Larmond (1982)**.

RESULTS AND DISCUSSION

The main components of Gurma melon fruit were illustrated in Table 2. The obtained results declared that the seeds (the useful part) represented about 4.9% of total weight of the fruit, while 95.1% of the fruit weight was discarded as a waste (29.75 peel and 65.35 pulp). These results are in agreement with **Abd El-Rahman *et al.* (2005), Abdelhady *et al.* (2014) and Korish (2015).** They found that seeds content of Gurma melon fruits ranged between 2.5-5.5%.

Table 1. Raw materials (g) used for processing different types of Fig and Gurma melon jams

Ingredients / Treatment	Sucrose (g)	Fig puree (g)	Gurma melon pulp (g)	Citric acid (g)/kg of added sugar	Pectin (g)
Control	1100	900	----	4.0	5.0
10% Gurma melon	1100	810	90	4.0	0.0
20% Gurma melon	1100	720	180	4.0	0.0
30% Gurma melon	1100	630	270	4.0	0.0

Table 2. General components of whole Gurma melon pulp (wet basis)

Parameter	Percentage (%)
Seed (%)	4.90
Peel (%)	29.75
Pulp (%)	65,35
Moisture (%)	94.55
Crude protein (%)	0.84
Crude fat (%)	0.19
Crude fiber (%)	0.12
Ash (%)	0.21
Total acidity	0.18
pH value	4.91
TSS (%)	4.32
Pectin (%)	1.07

Physicochemical Properties of Gurma Melon Fruit

The results for the proximate composition of Gurma melon pulp obtained from the analysis are presented in Table 2. The analysis of the fruit gave the following values, moisture 94.55%, protein 0.84%, fat (ether extracts) 0.19%, crude fiber 0.12% and Ash 0.21%. The obtained results revealed that Gurma melon had low content of total soluble solids (TSS 4.32° Brix) and total titratable acidity (0.18%, calculated as citric acid) with relatively low levels of pH value reached to 4.91. The fruit is rich source of pectin 1.07% which gives the flesh undesirable consistency and taste. However these results are in general accordance with those obtained by **Abdelhady *et al.* (2014) and Korish (2015)**.

Mineral Composition

Results in Table 3 show some minerals (*i.e.,* calcium, potassium, phosphor, magnesium zinc, iron, chromium, manganese and cupper) from which the Gurma melon residue is observed to be a considerable source for potassium, magnesium, zinc, chromium and copper but lowering in other minerals as reported in **USDA (2004)**. Lead and cadmium were very low. However lead and cadmium are a toxic heavy metal with widespread industrial uses, without known nutritional benefits **(Gallo and Serpe, 1997)**.

Flavoured Gurma Melon Jam

Jam is an agglomeration of fruit pulp and sugar at definite proportions. Its characteristic chemical, taste, colour and texture properties are paramount and expected to be stable over the

Table 3. Minerals contents of Gurma melon pulp (mg/100g dry wight)

Element	Concentration
Macro elements	
Calcium	10. 1
Magnesium	13.2
Phosphor	14.7
Potassium	127.3
Micro elements	
Lead	0.02
Chromium	1.49
Copper	1.46
Iron	0.36
Cadmium	0.03
Manganese	0.24
Zinc	0. 3

shelf for so time after first opening (**Souad *et al.,* 2012**). Jam samples were prepared without pectin and flavoured by adding 0.5, 1.0 and 1.5% of cinnamon powder.

Physicochemical Characteristics

Results regarding physicochemical characteristics of the tested jam during storage period are presented in Table 4. Results showed that TSS content of different jam treatments at zero time was 65.0 which gradually increased up to 68.9 during 6 month of storage. These results are in general accordance with **Ehsan *et al.* (2002 and 2003)** who reported the increase in TSS of watermelon flavoured by lemon jam from 68.6 to 68.9 and grape fruit apple marmalade from 70.0 to 70.8. The same trend was also observed by **Khan *et al*.(2012) and Owolade *et al.(*2016)** who found that TSS of strawberry jam was increased from 65.5 to 68.8 and watermelon jam from 65.0 to 65. 5 after 60 days of storage.

The pH is important parameter necessary for optimum gel formation in jams. In this study, the pH of the formulated jam decreased gradually during the storage period. Table 4 shows that the pH values of the jam under control decreased from 4.62 to 3.42 during storage. These results are in agreement with **Souad *et al.* (2012) and Owolade *et al.* (2016)** who reported decreasing trend in pH of all jams. The general decrease in pH (more acidic) might be due to ascorbic acid degradation, hydrolysis of pectin and other acidic compounds such as furfural development from sugar components **(Iftikhar *et al.,* 2007)**.

The viscosity measurement of food product is much useful behavioral and predictive information to take guidelines in formulation, processing and product development (**Shahnawaz and Shiekh, 2011**). Results as shown in Table 4, indicated that jam viscosity increased gradually from 70 to 100 Pa.s during storage period, such results may be due to the nature of Gurma melon pectin (**Korish, 2015**). Concerning to colour indices, it could observed that lightness (L) increased during storage. Jam containing samples cinnamon has more (a) and (b) values than control jam and values were increased with increasing the level of cinnamon addition.

Table 4. Some properties of Gurma melon jam flavoured by cinnamon during storage at room temperature

Parameter		Storage period (month)	Control	Level of cinnamon (%)		
				0.5%	1.0%	1.5%
		0	65.0	65.0	65.0	65.0
TSS (Brix)		3	67.8	68.8	68.3	68.2
		6	68.0	68.9	68.6	68.8
		0	4.62	4.92	4.98	4.99
pH value		3	4.60	4.89	4.95	4.97
		6	3.42	3.48	3.51	3.47
		0	70	70	80	80
Viscosity (Pa.s)		3	100	95	100	100
		6	100	95	100	100
		0	12.52	15.29	14.67	14.80
	L	3	14,95	16.86	15.98	14.95
		6	15.29	31.20	29.52	16.31
		0	0. 71	-0.89	-0.15	0.30
Colour Indices	A	3	2.38	0.28	0.69	2.67
		6	-0.44	0.31	2.02	3.41
		0	7.07	5.94	6.46	6.71
	B	3	9.00	8.45	8.10	9.11
		6	7,80	14.06	13.76	14.23

Organoleptic Properties of Flavoured Jam

One of limiting factor for consumer acceptability is the sensory properties. So, sensory evaluation were conducted on jams with respect to taste, flavour, colour, texture and general acceptance during 6 months of storage and results are shown in Table 5. Results confirmed that taste, flavour and colour were obviously enhanced by adding 1-1.5% of cinnamon even after 6 months of storage. The maximum overall acceptance score was 81.9%, obtained by adding1.5% of cinnamon followed by 76.6 for 1% cinnamon adding to jam. Generally, there was a slight decrease in overall acceptance scores during the storage period. A gradual decrease in the sensory evaluation mean score during the storage evaluation of watermelon jam was also reported by **Owolade *et al.* (2016)**.

Blending becomes one of the ways of utilization of more number of fruits for high quality in respect of both sensory and nutritional aspects.

Normally, the jam preparations require the addition of commercial or natural pectin as a gelling agent **(Madhav and Pushpalatha, 2002)**.

Mixed jam prepared by substituting fig with 10, 20 and 30% Gurma melon without using a commercial pectin.

Table 5. Sensory evaluation of Gurma melon pulp jam flavoured by cinnamon during storage at room temperature

Treatment	Storage period (month)	Taste 10	Flavour 10	Colour 10	Texture 10	Acceptance (%)
Control	0	7.4^{d}	7.1^{e}	7.5^{cd}	7.2^{c}	74.0^{f}
	3	6.9^{f}	6.8^{f}	7.1^{fg}	6.5^{e}	69.0^{j}
	6	7.2^{e}	6.5^{h}	6.9^{g}	6.9^{d}	68.8^{j}
Gurma melon + 0.5% cinnamon	0	6.7^{g}	6.7^{fg}	7.3^{def}	7.3b^{c}	69.9^{i}
	3	6.9^{f}	6.6^{gh}	7.2^{ef}	7.2^{c}	69.8^{i}
	6	7.4^{d}	7.2^{e}	7.4^{cde}	7.1^{c}	72.7^{f}
Gurma melon+ 1% cinnamon	0	7.7^{c}	7.7^{d}	8.0^{b}	7.2^{c}	76.6^{d}
	3	7.5^{d}	7.2^{e}	7.6^{c}	7.5^{ab}	74.4^{e}
	6	7.4^{d}	7.2^{e}	7.1^{fg}	7.6^{a}	73.3^{ef}
Gurma melon + 1.5% cinnamon	0	8.5^{a}	8.2^{b}	8.2^{a}	7.1^{c}	81.9^{a}
	3	7.9^{b}	8.5^{a}	8.3^{a}	7.3^{bc}	79.8^{b}
	6	7.8^{bc}	7.9^{c}	7.9^{b}	7.3^{bc}	77.3^{c}

[a-j] Means (± standard deviation) in each column followed by a different letters are significantly differed ($P < 0.05$).

Physicochemical Characteristics of Fig- Gurma melon Mixed Jam

The influence of using different levels of Gurma melon as a thickening agent on the quality parameters of prepared fig jam during 6 months of storage is shown in Table 6. results showed that although TSS initially adjusted to 65° Brix, some variation was occurred during storage. It's generally, increased after 6 month but with different rates, where increased from 65 to 67.8, 68.2 and 69.8°Brix by blending 10, 20 and 30% Gurma melon, respectively compared to 68.9°brix for control (fig jam). The same trend was also observed by **Abd El-Hak *et al.* (2016)** in sycamore - fig blends jam which may be due to the enzymatic conversion of monosaccharides into sugar molecules and degradation of pectin resulting in an increase of total soluble solids.

As for pH values, its increased from 4.51for fig jam to 4.66,4.70 and 4.69 for 10, 20 and 30% fig - melon mixed jams, respectively. This may due partly to their varying composition. Similarly the same observation was made on pH of jam prepared from grape fruit apple marmalade by **Iftikhar *et al.* (2007)** and **Rathore *et al.* (2007**) who reported that variation in acidity among different varieties might be due to the activity of citric acid or lemon during cooking process which lead to the degradation of citric acid.

Concerning to viscosity, initially it increased from 80 Pa.s of fig jam (include commercial pectin) to 83, 84 Pa.s and 95 for 10, 20 and 30% fig-melon mixed jams (without commercial pectin) respectively. After 6 months of storage, viscosity raised to 85 Pa.s in fig jam but lowered to 65 Pa.s for 10 then raised again to 89 and100 Pa.s for 20 and 30% fig-melon mixed jams. These results are in agreement with **(Korish, 2015)** who suggested that Gurma melon is potential source for pectin.

The colour changes in fig jams samples as affected by different levels of Gurma melon during 6 months of storage at room temperature are also shown in Table 6. A slight changes in L, a and b values were detected between control fig jam and other treatments contained Gurma melon. Otherwise, the addition of Gurma melon not showed any defects in colour parameters of fig jam.

Table 6. Some properties of fig-gurma melon mixed jam during storage at room temperature

Parameter		Storage period (month)	Control (Fig jam)	Level of Gurma melon pulp (%)		
				10%	20%	30%
		0	65.0	65.0	65.0	65.0
TSS° (Brix)		3	68.6	67.1	67.8	69.3
		6	68.9	67.8	68.2	69.8
		0	3.6	3.4	3.3	3.4
pH value		3	4.58	4.65	4.67	4.66
		6	4.51	4.66	4.70	4.69
		0	80	83	84	95
Viscosity (Pa.s)		3	85	65	89	100
		6	85	65	89	100
		0	15.47	15.54	14.32	14.43
	L	3	13.16	15.26	14.95	14.06
		6	13.22	15.33	14.21	14.24
		0	5.41	6.19	5.39	4.15
Color Indices	A	3	5.27	5.79	5.85	5.82
		6	5.29	5.83	5.88	5.89
		0	8.71	8.36	8.49	8.34
	B	3	7.48	9.01	8.35	8.33
		6	7,51	9.08	8.41	8.35

Organoleptic Properties of Mixed Jam

Results in Table 7 represent the effect of using Gurma melon for promotion of texture stability of fig jam. It could be observed that sensory attributes decreased gradually after storage for six months at room temperature in all tested samples. The highest overall acceptability score after six months of storage was noticed for jam of fig mixed with 20% Gurma melon. results showed insignificant differences between the colour, texture, taste, flavour in both control and 20% Gurma melon samples. The texture score was greatly affected by 10% melon replacing fig, while texture was improved by incorporation more than 20% of melon in fig melon mixed jam. On the other hand taste and flavour were scores were significantly reduced in 30% Gurma melon samples.

Conclusion

In conclusion, this study has shown that Gurma melon wastes represent more than 95% of crop pass thrown nature, causing an environmental pollution. Suitable methods must be adopted to utilize them for the conversion into value-added products**.** Results from this study clearly showed that high acceptance jam could be prepared from Gurma melon pulp plain or flavoured by 1% cinnamon. Furthermore, Gurma melon pulp could incorporated in blends up to 20% with Fig for producing good quality fig –Gurma melon mixed jam.

Table 7. Sensory evaluation of fig-Gurma melon mixed jam during storage at room temperature

Treatment	Storage period (month)	Taste 10	Flavour 10	Colour 10	Texture 10	Acceptance (%)
	0	9.2^{a}	8.9^{a}	9.0^{a}	8.9^{a}	89.9^{a}
Control	3	8.5^{d}	8.6^{c}	8.5^{c}	8.4^{b}	84.8^{c}
	6	8.2^{ef}	8.3^{d}	7.8^{e}	8.0^{cd}	80.6^{f}
	0	8.6^{cd}	8.6^{c}	8.7^{b}	8.0^{cd}	84.8^{c}
Fig + 10% Gurma melon	3	7.9^{g}	8.2^{d}	8.1^{d}	7.8^{d}	80.0^{g}
	6	8.3^{e}	8.2^{d}	7.7^{e}	7.4^{e}	79.0^{h}
	0	8.7^{cc}	8.8^{ab}	8.9^{ab}	8.6^{b}	87.5^{b}
Fig+ 20% Gurma melon	3	8.9^{b}	8.7^{bc}	8.9^{ab}	8.6^{b}	87.6^{b}
	6	8.2^{ef}	8.2^{d}	8.2^{d}	8.5^{b}	82.8^{d}
	0	8.0^{fg}	8.2^{d}	8.2^{d}	8.4^{b}	82.1^{e}
Fig+ 30% Gurma melon	3	8.0^{fg}	8.2^{d}	7.8^{e}	8.1^{c}	80.3^{fg}
	6	7.8^{g}	8.1^{d}	7.6^{e}	8.4^{b}	79.8^{g}

[a-j] Means (± standard deviation) in each column followed by a different letters are significantly differed (P< 0.05)

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ابتكـــــار مـــربـــى مـــن لـــب بطيـــخ الجـــورمـــــة كمصـــــدر غيـــر تقليـــدي

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بطيخ الجورمة (البطيخ النوبى أو بطيخ اللب) (*Citrullus lantus* var. colocynthoides)، أصبح أحد المحاصيل الهامة في مصر نظرا للقيمة الاقتصادية لبذوره، في حين أن المتبقى من الثمار يترك كمخلفات لذا فإن الهدف الرئيسي من هذا البحث هو دراسة مدى إمكانية الاستفادة من لب بطيخ الجورمة في إنتاج منتجات غذائية ذات جدوى اقتصادية مثل المربات، وقد أوضحت النتائج التى تم الحصول عليها أن مخلفات بطيخ الجورمة تمثل حوالى ٩٥% من المحصول وتحتوى على ٩٤,٥٥% رطوبة، ٠,٨٤% بروتين، ٠,١٩% دهون، ٠,١٢% ألياف خام، ٠,٢١% عناصر معدنية والمواد الصلبة الذائبة الكلية ٤,٣٢° بركس ودرجة الحموضة ٠,١٨%، تم استخدام لب بطيخ الجورمة في إعداد صنفين من المربات إحداهما مدعمة بالقرفة بنسبة تصل إلى ١,٥% والأخرى خليط من بطيخ الجورمة والتين بنسبة تصل إلى ٣٠%، تم تخزين كل عينات المربى في برطمانات زجاجية معقمة على درجة حرارة الغرفة لمدة ستة أشهر، تمت دراسة الخصائص الفيزيائية والكيميائية والحسية وتشير نتائج الدراسة انه يمكن تحضير مربى مقبولة بدرجة كبيرة من لب بطيخ الجورمة أو مدعمة بـ ١% قرفة وأيضاً يمكن خلط لب بطيخ الجورمة بنسبة تصل إلى ٢٠% مع التين لإنتاج مربى مشكلة ذات جودة عالية.

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