

Ampalaya (Momordica Charantia) Mint (Mentha Spicata) Candy

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Abstract

This research study entitled “Ampalaya Mint Candy” aimed at answering the following questions:

What is the method in preparing ampalaya mint candy? What is the level of acceptability of ampalaya mint candy in terms of appearance, aroma, taste and texture? What is the overall acceptability of ampalaya mint candy? Is there significant difference between the ratings of the respondents in the level of acceptability of ampalaya mint candy in terms of its sensory qualities?

The experimental method of research was used to determine the acceptability of the finished product in terms of its sensory qualities. In this study the product was evaluated by fifteen (15) children of Barangay Bubukal Sta Cruz laguna, ten (15) housewives of Barangay Bubukal Sta Cruz, Laguna, five (5) faculty, were invited to conduct a taste test of the ampalaya mint candy.

Based on the gathered data, the methods observed in preparing ampalaya mint candy includes the preparation of ingredients, tools and equipment, washing, slicing, removing the seeds in the inner part of the ampalaya, grating the ampalaya, chopping mint leaves, squeezing the ampalaya bits, adding, boiling, cooling, refrigerating, molding and wrapping. The ampalaya mint candy's appearance was **“Highly Acceptable”** with computed mean of 3.66 and standard deviation of 0.25; aroma was **“Highly Acceptable”** too with the computed mean of 3.59 and the standard deviation of 0.24, taste was **“Highly Acceptable”** with the computed mean of 3.50 and the standard deviation of 0.31; which is similar to texture which was **“Highly Acceptable”** with the computed mean of 3.59 and standard deviation of 0.31. The mean level of acceptability of ampalaya mint candy got average mean of 3.59 and standard deviation of 0.28. There was a significant difference on the level of acceptability of ampalaya mint candy in terms of sensory qualities.

Based on the findings of the study, the following conclusion were made. The ampalaya mint candy in terms of appearance, aroma, taste and texture was **“Highly Acceptable”**. There was no significant difference between the ratings made on the level of acceptability of ampalaya mint candy in terms of its sensory qualities; therefore, the hypothesis was partially supported.

Based on the conclusions of the study, the following are the recommendations: future researcher may further improve the appearance, aroma, taste and texture of Ampalaya Mint Candy using the modern equipment. Ampalaya Mint Candy is recommended to every housewife to prepare nutritious but not expensive sweet food for the family which can also serve as a source of income and activity for the family. The size, shape and color of Ampalaya Mint Candy may also be improved.

Keywords: Ampalaya, Mint, Candy, Appearance, Taste, Aroma, Texture

1. Introduction

Ampalaya (*Momordica charantia*) is commonly called bitter melon. The name called bitter melon because of its bitter taste due to the presence of momordicin, and bitter melon is believed that the most bitter taste of all vegetables.

Ampalaya Bitter Melon is a climbing vine that grows up to 5cm, with tendrils up to 20 cm long. Ampalaya leaves are heart shaped, 5-10cm across, cut into 5-7 lobes. Each ampalaya bitter melon plant bears separate yellow male and female flowers. Ampalaya bears fleshy green fruit, oblong shaped with pointed ends, ribbed and wrinkled, bursting when mature to release seeds are flat with notched margins.

Ampalaya is very popular in Asia, because of its shape the like eggplants, carrots, it was green in color, with these characteristics, thick, wrinkles, in texture folds or ruffles on the skin, and a likeable and even “addicting” because of its bitter taste to many people.

In terms of its nutritional contents, ampalaya are rich in minerals and vitamins, notable iron, calcium, phosphorus and vitamin B.

Mint is a leafy plant that's perhaps best known for its association with fresh breath due to the cool sensation it creates in the mouth. Toothpaste, mouthwash, breath mints, and chewing gum are all commonly flavored with mint.

In addition to freshening breath, mint is also used to add flavor to foods and drinks. Mint is known for adding a fresh flavor to mint chocolate chip ice cream, mojito cocktails, and lamb dishes. There are many varieties of the mint plant, and most fall under the genus *Mentha*. Because mint plants spread quickly, gardeners tend to grow them in containers. When planted directly into the ground, they can become invasive and take over a garden. Mint grows natively on all continents except Antarctica. Peppermint and spearmint are likely the most commonly used mint varieties, but many others exist, such as wild mint and water mint. Some plants referred to as "mint" also fall under the genus *Monarda*. Both *Mentha* and *Monarda* genera are within the same family, called *Lamiaceae*. *Monarda* mints include horsemint, catmint, and stonemint.

All varieties of mint leaves may be used fresh, in dried herb form, brewed as a tea, or concentrated in an essential oil.

Nowadays there are lots of diseases spreading and many people who have weak immune system has catch those kind of disease especially the children. Doctors recommended that healthy living is the best way how to keep away from transmitting diseases like healthy exercise, proper diet and in taking vitamins. There are some fruits and vegetables that the people didn't know how much nutrients they can get from it. Sometimes even they know the fruits and vegetables but they still not like to eat those because of its taste. That is why the researcher will create a product that is made in Ampalaya Mint into candy many people should get the nutrients coming from ampalaya and mint especially those children that didn't like to eat vegetables.

Bitter melon comes in an assortment of shapes and sizes. In china, bitter melon was 20-30 cm long, oblong and green color with a warty surface. In india the bitter melon has a skinny shape with pointed end; its surface was covered with craggy

triangular “teeth” and ridges, with green to white in color. 323

Mint is a perennial herb with very fragrant, toothed leaves and tiny purple, pink, or white flowers. There are many varieties of mint—all fragrant, whether shiny or fuzzy, smooth or crinkled, bright green or variegated. However, you can always tell a member of the mint family by its square stem. In the province of laguna the land is indeed perfect in growing variety of herb and vegetables that are good source of different excellent tasting products.

Mint has been used in traditional medicine to treat a variety of ailments for many years. Unfortunately, there aren't many human studies documenting the impact mint has on the body apart from digestion support and irritable bowel syndrome relief, research could confirm that mint is useful in treating a wider variety of illnesses. Using fresh mint and other herbs and spices in cooking can help a person add flavor while reducing their sodium and sugar intake. Throughout history, people have used different species of mint plants in medicine. Different types of mint plants offer a range of antioxidant qualities and potential health benefits, especially for people who have irritable bowel syndrome (IBS).

People nowadays are always seeking for something new and unique that can be useful in everyday life. And this is why all the industries today are craving for new inventions that will attract the attention of the consumers. One of these industries in the field of food production that lead to different kinds of edible materials available in different kinds of food establishments one of these food products is candy.

Candies are still favorites of children today, though now it is more typically seen as type of garnish. However, candy also depends on how people treat it. Unlike sweet pastries it is served as a dessert course at the end of a meal, candies are normally eaten casually, often with the fingers, and also as a snack between meals. Ampalaya and mint as main ingredient which is available at home and in the market can be more soothing to taste to all level of consumers.

1.1 Objectives of the Study

The study entitled Ampalaya Mint Candy sought to answer the following questions:

1. What is the methods in preparing Ampalaya Mint Candy?
2. What is the level of acceptability of Ampalaya Mint Candy in terms of its sensory qualities such as:
 - 2.1 appearance;
 - 2.2 aroma;
 - 2.3 taste and;
 - 2.4 texture?
3. Is there a significant difference between the acceptability of Ampalaya Mint Candy as rated by the respondent?

2. Methodology

Experimental method of research is used in the study to determine the general acceptability of ampalaya mint candy and attempt by the researcher to maintain control over all factors that may affect the result of an experiment in terms of its sensory qualities such as appearance, aroma, taste, and texture.

According to Matthews & Ross (2010) quantitative research methods are fundamentally put on the collection of data that is set up and that could be displayed numerically. Based on Mildner (2019), the experimental research is a research which has the purpose to find the cause-effect relationship among variables in a controlled condition.

Moreover, the researchers were used the trial and revision process to produce a best recipe of Ampalaya Mint Candy.

The developed product will be evaluated by 20 CTE students, 5 experts in making candy, 15 children and 15 housewives.

The flow chart below shows the method of preparation in making Ampalaya Mint Candy.

Methods in Making Ampalaya Mint Candy

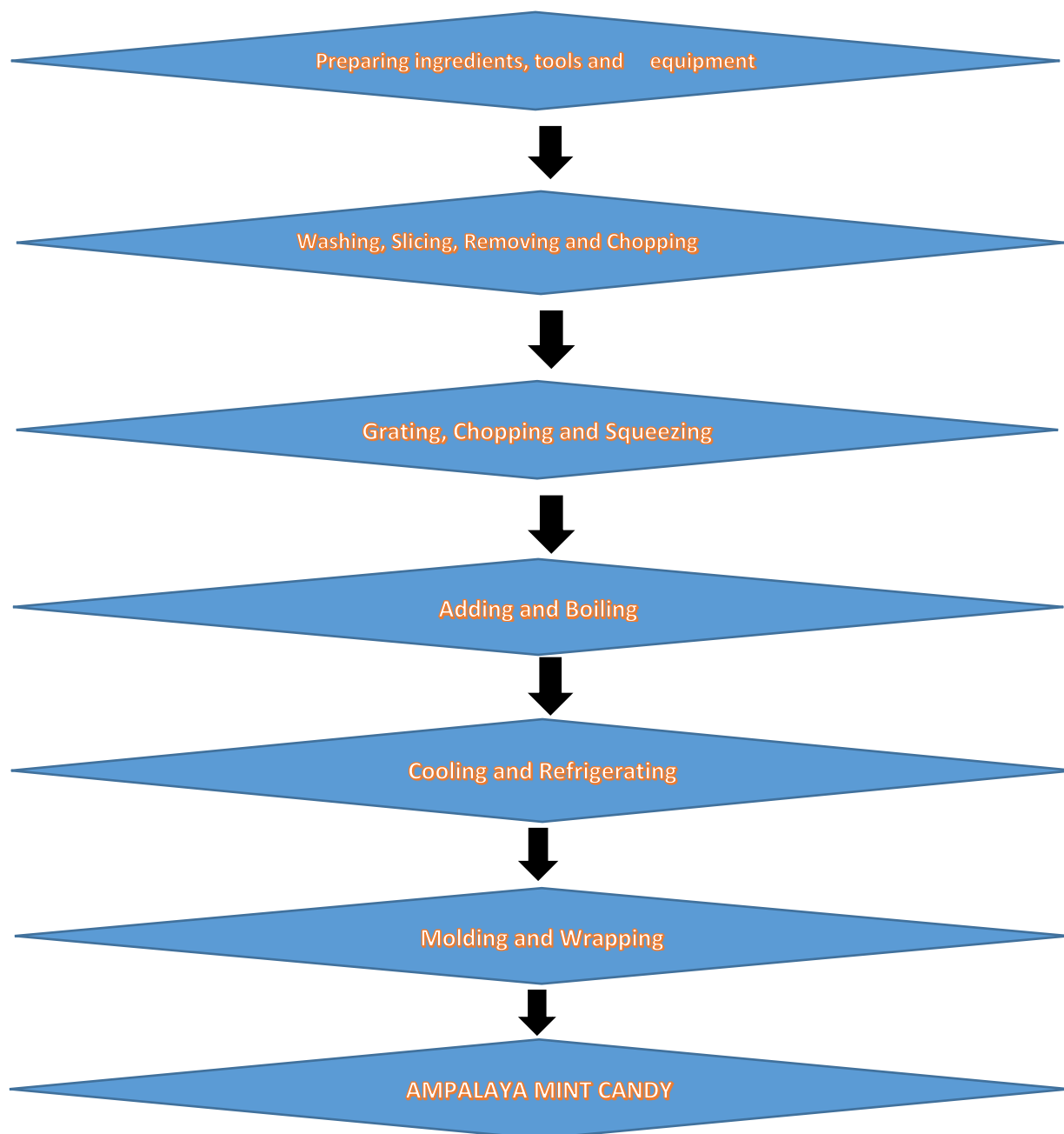


Figure 1. Methods in Making Ampalaya Mint Candy

The methods used in making Ampalaya Mint Candy were preparing the ingredients tools and equipment, wash the ampalaya and mint slice and removed the seeds, grate ampalaya extract the juice chop mint leaves, boil ampalaya extract, mint, water, and sugar, add glucose stir while it's boiling, wait until sugar become sticky, place the candy in the refrigerator and leave for 1 – 2 days until the candy is fully hard, mold and wrap the ampalaya mint candy.

Table 1. Mean Level of Acceptability of Ampalaya Mint Candy as Rated by Selected Faculty based on Different Sensory Qualities

Criteria	Mean	Verbal Interpretation
SD		
Appearance		
1. The color is attractive and appealing to the eyes 0.55	3.40	Highly Acceptable
2. The product has a good packaging 0.45	3.80	Highly Acceptable
3. The ampalaya mint candy is look like the commercial candy. 0.55	3.60	Highly Acceptable
Average Mean 0.52	3.60	Highly Acceptable
Aroma		
1. The smell of the product is not common into the other candy 0.45	3.20	Highly Acceptable
2. The product is distinctive and with savory scent. 0.45	3.80	Highly Acceptable
3. The product is fascinating because of its delicious smell 0.55	3.60	Highly Acceptable
Average Mean 0.48	3.53	Highly Acceptable
Taste		
1. Ampalaya mint candy has a unique taste compare to a common candies 0.45	2.80	Acceptable
2. Ampalaya mint candy soothed the tongue of the consumer 0.71	3.00	Acceptable
3. Can reach a high degree of sensation 0.84	3.20	Acceptable
Average Mean 0.67	3.00	Acceptable
Texture		
1. The roughness of the finished product is evident as them signifies the fiber content of the ampalaya mint candy 0.71	3.00	Acceptable
2. The firmness of the finished product could reflect the quality of the		Acceptable

same due to structure 0.84	3.20		326
3. It considerable in size, shape and arrangement which are practical Handle 0.89	3.60	Highly Acceptable	
Average Mean 0.81	3.27	Acceptable	

Legend:

Scale	Remarks	Verbal Interpretation
3.28 – 4.00	Very Appealing	Highly Acceptable
2.52 – 3.27	Appealing	Acceptable
1.76 – 2.51	Less Appealing	Fairly Acceptable
1.00 – 1.75	Not Appealing	Not Acceptable

Table 1 shown the faculty evaluation on the appearance of the Ampalaya (momordica Charantia) Candy showed that the item one (1) The color was attractive and appealing to the eyes, got a weithted mean of 3.40 with standard deviation of 0.55 and verbally interpreted as “Highly Acceptable”, next item two (2) The product has a good packaging, got a weithted mean of 3.80 with the standard deviation of 0.45 and verbally interpreted as “ Highly Acceptable, the next item (3) The Ampalaya Candy look like a commercial candy, got a weighted mean of 3.60 with the standard deviation of 0.55 and verbally interpreted as “ Highly Acceptable”.

The faculty evaluation of aroma shows that item one ampalaya mint candy was acceptable in terms of aroma, got weighted mean of 3.53 with the standard deviation of 0.48 and verbally interpreted as “Highly Acceptable, Next item the smell of the product was not common into the other candy, got a weighted mean of 3.20 with the standard deviation of 0.45 and verbally interpreted as Acceptable, then the item three The product was distinctive and with savory scent, got a weighted mean of 3.80 with the standard deviation of 0.45 and verbally interpreted as “ Highly Acceptable”, next item the product was fascinating because of its delicious and attractive smell, got a weighted mean of 3.60 with the standard deviation of 0.52 and verbally interpreted as “ Highly Acceptable.

The faculty evaluation of taste in item no one Ampalaya Mint candy has a unique taste compare to a common candies; got a weighted mean of 2.80 with the standard deviation of 0.45 and verbally interpreted as “ Acceptable” then the next item two Ampalaya Mint candy soothed the tongue of the consumer”, got a weighted mean of 3.00 with the standard deviation of 0.71 and verbally interpreted as “ Acceptable”, last item three Ampalaya mint candy can reach a high degree of sensation”, got a weighted mean of 3.20 with the standard deviation of 0.84 and verbally interpreted as “ Acceptable”.

With the faculty evaluation of texture in item no one (1) The roughness of the finished product is evident as them signifies the fiber content of the ampalaya mint candy, got a weighted mean of 3.00 with the standard deviation of 0.71 and verbally interpreted as “ Acceptable “, next item two (2) The firmness of the finished product could reflect the quality of the same due to structure, got a weighted mean of 3.20 with the standard deviation of 0.84 and verbally interpreted as “ Acceptable “, the next item three (3) Ampalaya mint candy has considerable size, shape and arrangement which are practical handle, got a weighted mean of 3.60 with the standard deviation of 0.89 and verbally interpreted as “Highly Acceptable”.

Table 2. Mean Level of Acceptability of Ampalaya Mint Candy as Rated by Selected Housewives based on Different Sensory Qualities

Criteria	Mean	Verbal Interpretation
SD		
Appearance		
1. The color is attractive and appealing to the eyes 0.48	3.70	Highly Acceptable
2. The product has a good packaging 0.32	3.90	Highly Acceptable
3. The ampalaya mint candy is look like the commercial candy. 0.52	3.40	Highly Acceptable
Average Mean 0.49	3.67	Highly Acceptable
Aroma		
1. The smell of the product is not common into the other candy 0.48	3.70	Highly Acceptable
2. The product is distinctive and with savory scent. 0.42	3.80	Highly Acceptable
3. The product is fascinating because of its delicious smell 0.52	3.60	Highly Acceptable
Average Mean 0.47	3.70	Highly Acceptable
Taste		
1. Ampalaya mint candy has a unique taste compare to a common candies 0.42	3.80	Highly Acceptable
2. Ampalaya mint candy soothed the tongue of the consumer 0.53	3.50	Highly Acceptable
3. Can reach a high degree of sensation 0.52	3.60	Highly Acceptable
Average Mean 0.49	3.63	Highly Acceptable
Texture		
1. The roughness of the finished product is evident as them signifies the fiber content of the ampalaya mint candy 0.52	3.60	Highly Acceptable
2. The firmness of the finished product could reflect the quality of the		

same due to structure 0.48	3.70	Highly Acceptable	328
3. It considerable in size, shape and arrangement which are practical Handle 0.70	3.60	Highly Acceptable	
Average Mean 0.57	3.63	Highly Acceptable	

Legend:

Scale	Remarks	Verbal Interpretation
3.28 – 4.00	Very Appealing	Highly Acceptable
2.52 – 3.27	Appealing	Acceptable
1.76 – 2.51	Less Appealing	Fairly Acceptable
1.00 – 1.75	Not Appealing	Not Acceptable

The housewives' evaluation on the appearance of the Ampalaya mint candy showed that item one Ampalaya mint candy was accwptablw in terms of appearance, got a weighted mean of 3.70 with the standard deviation of 0.48 and verbally interpreted as "Highly Acceptable, the product has a good packaging, got a weighted mean of 3.90 with the standard deviation of 0.32 and verbally interpreted as "Highly Acceptable", the ampalaya mint candy look like a commercial candy got a weighted mean of 3.40 and verbally interpreted as "Highly Acceptable".

While the housewives evaluation of aroma shown that item one the smell of the product was not common into the other candy", got a weighted mean of 3.70 with the standard deviation of 0.48 and verbally interpreted as "Highly Acceptable", the product was distinctive and with savory scent, got a weighted mean of 3.60 with the standard deviation of 0.52 and verbally interpreted as "Highly Acceptable", next item three the product was fascinating because of its delicious and attractive smell, got a weighted mean of 3.50 with the standard deviation of 0.53 and verbally interpreted as "Highly Acceptable".

The housewives' evaluation of taste in item one has a unique taste compare to a common candies, got a weighted mean of 3.80 with the standard deviation of 0.42 and verbally interpreted a "Higly Acceptable", next item two ampalaya mint candy soothed the tongue of the consumer", got a weighted mean of 3.60 with the standard deviation of 0.52 and verbally interpreted as "Highly Acceptable", next item three candy has a unique taste compare to a common candies, got weighted mean of 3.80 with the standard deviation of 0.42 and verbally interpreted as "Highly Acceptable".

The housewives' evaluation of texture in item one the product has a good texture, got a weighted mean of 3.70 with the standard deviation of 0.48 and verbally interpreted a "Highly Acceptable" item two the ampalaya mint candy has a smooth texture, got a weighted mean of 3.60 with the standard deviation of 0.52 and verbally interpreted as "Highly acceptable "

Table 2. Mean Level of Acceptability of Ampalaya Mint Candy as Rated by Selected Children based on Different Sensory Qualities

SD	Criteria	Mean	Verbal Interpretation
Appearance			
4.	The color is attractive and appealing to the eyes 0.00	4.00	Highly Acceptable

5.	The product has a good packaging 0.45	3.80	Highly Acceptable
6.	The ampalaya mint candy is look like the commercial candy. 0.55	3.60	Highly Acceptable
Average Mean 0.33		3.80	Highly Acceptable
Aroma			
4.	The smell of the product is not common into the other candy 0.45	3.80	Highly Acceptable
5.	The product is distinctive and with savory scent. 0.55	3.40	Highly Acceptable
6.	The product is fascinating because of its delicious smell 0.45	3.80	Highly Acceptable
Average Mean 0.48		3.67	Highly Acceptable
Taste			
4.	Ampalaya mint candy has a unique taste compare to a common candies 0.45	3.80	Highly Acceptable
5.	Ampalaya mint candy soothed the tongue of the consumer 0.45	3.20	Acceptable
6.	Can reach a high degree of sensation 0.45	3.80	Highly Acceptable
Average Mean 0.45		3.60	Highly Acceptable
Texture			
4.	The roughness of the finished product is evident as them signifies the fiber content of the ampalaya mint candy 0.55	3.60	Highly Acceptable
5.	The firmness of the finished product could reflect the quality of the same due to structure 0.45	3.80	Highly Acceptable
6.	It considerable in size, shape and arrangement which are practical Handle 0.55	3.40	Highly Acceptable
Average Mean 0.51		3.60	Highly Acceptable

Legend:

Scale
3.28 – 4.00

Remarks
Very Appealing

Verbal Interpretation
Highly Acceptable

2.52 – 3.27

Appealing

Acceptable

330

1.76 – 2.51

Less Appealing

Fairly Acceptable

1.00 – 1.75

Not Appealing

Not Acceptable

While the children evaluation on the appearance of Ampalaya Mint candy showed that item one the color was attractive and appealing to the eyes” got a weighted mean of 4.00 with the standard deviation of 0.00 and verbally interpreted as “Highly Acceptable, the next item two the product has a good packaging” got a weighted mean of 3.80 with the standard deviation of 0.45 and verbally interpreted as “Highly Acceptable”, item three the ampalaya mint candy look like a commercial candy” got a weighted mean of 3.60 with the standard deviation of 0.55 and verbally interpreted as “Highly Acceptable”.

The children evaluation of aroma shows that item one The smell of the product was not common into the other candy” got a weighted mean of 3.80 with the standard deviation of 0.45 and verbally interpreted as “Highly Acceptable” next item the product was fascinating because of its delicious and attractive smell, got a weighted mean of 3.40 with the standard deviation of 0.55 and verbally interpreted as “Highly Acceptable” then the next the product was distinctive and with savory scent, got a weighted mean of 3.80 with the standard deviation of 0.45 and verbally interpreted as “Highly Acceptable”.

While the children evaluation of taste in item one Ampalaya Mint Candy has an after effect” got a weighted mean of 3.80 with the standard deviation of 0.45 and verbally interpreted as “Highly Acceptable” next item The taste of Ampalaya Mint Candy was similar in other candies, got a weighted mean of 3.20 with the standard deviation of 0.55 and verbally interpreted as “Highly Acceptable” next item three Ampalaya Candy has a unique taste compare to a common candies, got a weighted mean of Acceptable.

Therefore the children evaluation of texture in item one Ampalaya Mint Candy was acceptable in terms of texture, got a weighted mean of 3.60 with the standard deviation of 0.55 and verbally interpreted as “Highly Acceptable, next item Ampalaya Mint Candy achieved its desired candy texture, got a weighted mean of 3.80 with the standard deviation of 0.45 and verbally interpreted as “Highly Acceptable” the next item three Ampalaya Mint Candy has considerable size, shape and arrangement which are practical handle, got a weighted mean of 3.40 with the standard deviation of 0.55 and verbally interpreted as “High”.

Table 3. Significant Difference Between the Selected Faculty, Selected Housewives and Selected Children on the Acceptability of Ampalaya Mint Candy

Sensory Qualities	Mean		
	Faculty	Housewives	Children
Appearance	3.60	3.67	3.80
Aroma	3.53	3.70	3.67
Taste	3.00	3.63	3.60
Texture	3.27	3.63	3.60

As shown in table 3, the faculty evaluation on the acceptability of Ampalaya Mint Candy seeing the different criteria got the total average weighted mean of 3.60 and verbally interpreted as “Highly Acceptable”. Therefore the housewives’ evaluation on the acceptability Ampalaya Mint Candy seeing the different criteria got the total average weighted mean 3.67 and verbally interpreted as “Highly Acceptable”.

Significant Difference on the Level of Acceptability of Ampalaya Mint Candy based on its Sensory Qualities

As reflected on table 3, the overall result of the Acceptability of Ampalaya Mint Candy according to its sensory qualities such as appearance with the computed F-value of 0.42 and P-value of 0.74 that the results to “Not Significant”.

Sensory qualities of aroma with the computed F-value of 1.01 and P-value of 0.40 that results to “Not Significant”. 331

Table 4. Significant Difference on the level of Acceptability of Ampalaya Mint Candy based on its Sensory Qualities

Sensory Qualities	F-Value	P-Value	F-Critical Value	Verbal Interpretation
Appearance	0.42	0.74	2.98	Not Significant
Aroma	1.01	0.40	2.98	Not Significant
Taste	5.14	0.01	2.98	Not Significant
Texture	1.09	0.37	2.98	Not Significant

Sensory qualities of taste with the computed F-value of 5.14 and P-value of 0.01 that results to “Significant”.

Sensory qualities of texture with the computed F-value of 1.09 and P-value of 0.037 that results to “Not Significant”.

4. Conclusion and Recommendation

Based on the findings of the study, this was the following conclusions.

The method used in preparing Ampalaya Mint Candy were appropriate and rated as highly acceptable by the group of respondents which were the faculty, housewives and children rated acceptable which is showed that ampalaya and mint when combined made an excellent result in making candy. The researcher personally chooses ampalaya and mint whom they believed it gives nutritional value of the product substitution of vegetable and herb for candy has an economic value and gave result as sweet taste and pleasing appearance.

Based on the conclusion of the study, the following are the recommendations:

1. The size, shape and color for the Ampalaya Mint Candy may also be improved to add uniqueness that will help consumer to patronize the product.
2. Ampalaya mint candy is recommended to every housewife to prepare nutritious but not expensive for the family which can also serve as a source of income and activity for the family.
3. Future researcher may further improve the appearance, aroma, taste and texture of Ampalaya Mint Candy using the modern technology.

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