

SENSORY EVALUATION AND ACCEPTABILITY OF CALA-MANGO BUTCHI

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ABSTRACT

This study presents the importance of snacks in many Filipinos daily food intake. It also states the benefits and uses of mangoes and calabash fruit. This study aims to: produce a food product which can help farmers dispose of their products and create an additional income; make a local food which is healthy and affordable; utilize and maximize the use of mangoes and calabash fruit. This study also focused in assessing the acceptability cala-mango butchi. This study used the quantitative descriptive survey method of research. It is appropriate in this study because it allows for standardized measurement using numerical rating scale and enables statistical analysis. Moreover, the qualitative approach by observing the reactions of the respondents were considered. Gathered data were analyzed and interpret with the use of mean and percentage. Percentage is used to describe the profile of the respondent. Mean is used to determine the acceptability of the butchi in terms of its aroma, appearance, flavor and texture. Results showed that the respondents have different perception about cala-mango butchi but in summary this product is very much accepted by the respondents in terms of appearance, texture, aroma and flavor. This study recommends to future researchers to consider making butchi with other flavors and do a larger scale of sampling. They may also consider adding marketability research.

Key words: acceptability, cala-mango butchi, perception

INTRODUCTION

People, nowadays are getting conscious of their health and body. For this reason, people vary their food preferences due to a lot of factors like the nutritional value, influence of taste, psychological, emotional, culture, health and the economic status. It was already a tradition of every family to have cultural values to follow particularly food for the benefit of oneself.

Many Filipinos love to eat snacks such as bread, cake, pastries, native food and desserts. Pastries for instance can be in various types, forms and sizes to fit the choices of diners. It could be a buchi or sesame balls, a kind of pastry snack popular market in the Philippines. It is a sticky rice balls that are made of glutinous rice flour,

coated with sesame seeds and usually stuffed with sweet mung bean paste but can also be stuffed with other filling flavors.

A mango is a popular tropical fruit that is eaten in sweet and savory dishes around the world. It can be green, yellow, orange, red, or a combination of these colors, and has yellow or orange flesh surrounding a flat, hard pit. The fruit is typically peeled and cut away from the pit before use. A mango can be eaten raw unripe or ripe, or cooked into desserts, curries, and chutneys. It's a moderately expensive piece of produce per fruit, but many varieties are large and heavy. It is also a popular dried fruit.

Ripe mango has a sweet, tropical flavor similar to a mixture of peach and pineapple. Some varieties are sweeter than others, and the texture can vary, however commercially grown mangoes tend to have a balance of sweet and tart and a texture similar to a peach when ripe. Unripe mango is crunchy and tart (not sweet) and is often used in salads and savory dishes.

Mango is used in a wide variety of dishes spanning sweet and savory, raw and cooked. Raw mango can be eaten plain as a sweet snack, added to smoothies and cocktails, used to top cakes and tarts, or served with coconut sticky rice as a popular Thai dessert. The ripe fruit can also be used to make savory sauces, chutneys, or added to stir-fries and curries. Crunchy, unripe mango is popularly used in salads and made into pickles. Dried mango is also a popular snack and is often added to granola and trail mix.

Mangoes can frequently be found year-round in supermarkets, with more availability in the late spring and early summer. The fruit is typically priced per mango or per pound and sold loose. Different varieties can sometimes be found in specialty markets, Asian groceries, and Mexican markets. Peeled, cubed, frozen mango is available year-round in the freezer section, and dried mango is commonly found with the snacks or bulk goods. Canned cubed or pureed mango is often sold at groceries as well.

Mango (*Mangifera Indica* Linn.) fruit is very popular around the world, which provides a soothing sweet aroma and delicious taste. Mango fruits, pulp and leaves are integral parts of Asian culinary purpose. Especially, raw mangoes are used in salads and pickles, while ripe mangoes are consumed as fruits, milkshakes and desserts. Literature reveals that mango fruits, fruit pulp and leaf have been used for multiple health problems and ailments especially for digestive and gastrointestinal health in Ayurvedic medicines for thousands of years. Chemical investigations have demonstrated that mango and mango leaves contain structurally diverse polyphenolic antioxidants and micronutrients including *Mangifera*, beta-carotene, lutein, zeaxanthin, riboflavin, thiamine, niacin, anthocyanins and anthocyanidins, flavonoids, alkaloids and minerals.

Mangoes are usually sold and bought raw or plain, to be eaten or to be added with shakes and fruit salads. This clearly shows that mangoes have limited use which results to limited or low sales. Loads of harvested mangoes are wasted in some markets and farms. Innovating new use of mangoes will contribute and help increase potential enterprise and demand. These pastries can be commercialized as an additional source of income for farmers because of its longer shelf life and storage ability.

While Calabash (*Crescentia Cujete*) or known in the Philippines as Miracle Fruit is an evergreen tree reaching 10 to 25 feet in height with a broad, irregular crown composed of long, spreading branches clothed in 2- to 7-inch-long dark green leaves, which create moderate shade beneath the tree. Calabash is most outstanding in the landscape for its year-round production of flowers and fruit, both of which are unusual. The 2 ¼-inch-wide flowers are greenish white to greenish yellow with purple streaks, bell-shaped, and appear to emerge directly from the branches. These are followed by the emergence of the large, round fruit, 4 to 12 inches in diameter, with a smooth, hard shell, which hang directly beneath the branches.

In some localities of Bohol, many people plant the miracle fruit locally known as calabash. This fruit grows even in the backyard or farm. Miracle fruit or calabash bears fruit regardless of the season. People may harvest the fruit as needed. Miracle fruit contains therapeutic value that cures different illnesses and diseases (Pramod, K. 2018).

Every part of the calabash tree has a unique application, making it notable for its versatility. The pulp of the fruit is used by natural healers to treat respiratory disorders like asthma and to make cough medication. Additionally, it includes hydrocyanic acid, a purgative. Syrup made from the pulp is used as a medication to treat dysentery as well as stomachaches. Moreover, the fruit has laxative qualities. Externally, the fruit's flesh treats bruises especially in youngsters, and helps to repair skin disorders.

The miracle fruit's most significant advantages include its capacity to control diabetic symptoms, support weight loss initiatives, strengthen the immune system, improve vision health, prevent chronic disease, among other things. This fruit contains quantities of vitamin A, which has been directly related to better eye health, including a reduced risk of macular degeneration and cataract formation. Diabetic folks may benefit most from miracle fruit's health benefits because they can use it to replace sugar in their diets without risk. A few of the fruit's active components can naturally reduce insulin sensitivity, which is advantageous for diabetes people aside from the flavor impact (Zagar, T., 2012).

The body can benefit from an antioxidant boost from the abundance of polyphenolic chemicals in this fruit, which can lower free radical levels and lessen oxidative stress on organ systems. Numerous unfavorable side effects are associated

with cancer treatment, including nausea and vomiting as well as a metallic aftertaste in the mouth. Miracle fruit can frequently reduce this lingering taste, helping to improve quality of life while receiving cancer treatment (Tacio, H., 2015).

Recently, mango farmers in a town in Isabela Province were experiencing a glut in harvest with not enough buyers, forcing some of them to dump more than 3,000 kilos of unsold mangoes on the roadside as prices dropped due to oversupply. While majority of the miracle fruits, were left to fall and perish on the ground, which is a really sad sight. People lack the expertise necessary to effectively use and innovate with this fruit. They dread the sticky scent and the flesh's dark color. But they are unaware of the fact that the miracle fruit's sweet, healing black juice is what gives it its name.

Amid to rise of many food products which most are unhealthy and expensive, and the overproduction of some raw materials, this study aims to produce a food product which can help farmers dispose of their products and create an additional income, to make a local food which is healthy and affordable, and utilize and maximize the use of mangoes and calabash fruit. This study also focused in assessing the acceptability cala-mango butchi. This study aims to investigate level of acceptance of the respondents on cala-mango butchi in terms of appearance, texture, aroma, and taste and to analysis respondents' reaction to the butchi.

MATERIALS AND METHOD

This study used the quantitative descriptive survey method of research. It is appropriate in this study because it allows for standardized measurement using numerical rating scale and enables statistical analysis. Moreover, the qualitative approach by observing the reactions of the respondents were considered. This study was conducted at Barangay Aurora West, Diffun, Quirino. Barangay Aurora West is one of the other 33 barangays of the Municipality of Diffun which is a second-class municipality in the province of Quirino. Respondents of the study are residents of Aurora West, Diffun, Quirino. They were chosen using random sampling for convenience. There are 4 males and 14 females with the total of 18 respondents.

This study used questionnaire and hedonic scale instruments to gather the sets of needed data. Questionnaire is an instrument used in this study to determine the respondents' level of acceptance of the butchi in terms of aroma, appearance, texture and taste. Hedonic Scale is an instrument used in tasting panels where the respondents indicate the level of their acceptance for the butchi.

To arrive at a verbal description of each item, the following arbitrary guide was followed:

4.21-5.00	Very Much Acceptable
3.41-4.20	Much acceptable
2.61-3.40	Acceptable

1.81-2.60 Barely Acceptable
1.00-1.80 Not acceptable

Gathered data were analyzed and interpret with the use of mean and percentage. Percentage is used to describe the profile of the respondent. Mean is used to determine the acceptability of the butchi in terms of its aroma, appearance, flavor and texture. Before gathering the data on the level of acceptability of the two flavors of butchi, ingredients, tools and materials were prepared. After everything was prepared, the butchi were fried, on the same day, the freshly made butchi and respondents are gathered in one area for them to taste and rate each flavor using the printed questionnaire given to them. Reactions of the respondents were also observed.

RESULTS AND DISCUSSION

Level Of Acceptability Of Cala-Mango Butchi

The following tables showcase the level of acceptability of Cala-Mango butchi in terms of:

Table 1: Appearance

Acceptability Level	Numerical Correspond	Responses	Percentage	Mean
Very Much Acceptable	5	15	83.33	4.17
Much Acceptable	4	3	16.67	.67
Acceptable	3	0	0	0
Barely Acceptable	2	0	0	0
Not Acceptable	1	0	0	0
	TOTAL	18	100	4.84
Verbal Interpretation: Very Much Acceptable				

This table above shows that in terms of appearance, 15 or 83.33% of the respondents accept it very much while 3 or 16.67% of them answered much acceptable, but looking at the overall mean which is 4.84 and following the arbitrary guide, the appearance will be described as very much acceptable.

Table 2: Texture

Acceptability Level	Numerical Correspond	Responses	Percentage	Mean
Very Much Acceptable	5	15	83.33	4.17
Much Acceptable	4	1	5.56	.22
Acceptable	3	2	11.11	.33
Barely Acceptable	2	0	0	0
Not Acceptable	1	0	0	0
	TOTAL	18	100	4.72
Verbal Interpretation: Very Much Acceptable				

The foregoing results shows that 83.33% or 15 of the respondents answered very much accepted, one answered much accepted and 2 answered acceptable. The overall mean indicates that the texture of cala-mango butchi is very much accepted.

Table 3: Aroma

Acceptability Level	Numerical Correspond	Responses	Percentage	Mean
Very Much Acceptable	5	11	61.11	3.06
Much Acceptable	4	6	33.33	1.33
Acceptable	3	1	5.56	.17
Barely Acceptable	2	0	0	0
Not Acceptable	1	0	0	0
	TOTAL	18	100	4.11
Verbal Interpretation: Much Acceptable				

The table suggest that only 11 or 61.11% of the respondents accepted very much the aroma of the cala-mango butchi. 6 or 33.33% of them answered much acceptable and 1 answered acceptable. The total mean shows that the aroma of cala-mango butchi is much acceptable.

Table 4: Flavor

Acceptability Level	Numerical Correspond	Responses	Percentage	Mean
Very Much Acceptable	5	8	44.44	2.22
Much Acceptable	4	6	33.33	1.33
Acceptable	3	2	11.11	.33
Barely Acceptable	2	2	11.11	.22
Not Acceptable	1	0	0	0
	TOTAL	18	100	4.11
Verbal Interpretation: Much Acceptable				

It is shown in the table that almost half of the respondents chose 5 or very much acceptable in terms of flavor and two of them barely accepted the taste which means that cala-mango flavor needs improvement but overall mean shows that the cala-mango flavor is still much acceptable.

Table 5: Overall Acceptability of Cala-Mango Butchi

FOOD QUALITY ATTRIBUTES	MEAN	VERBAL INTERPRETATION
Appearance	4.83	Very Much Acceptable
Texture	4.72	Very Much Acceptable
Aroma	4.61	Very Much Acceptable
Flavor	4	Much Acceptable
Overall Mean	4.54	Very Much Acceptable

As we can see in the table, the overall mean of Cala-butchi is 4.54 and using the arbitrary guide for verbal interpretation it is implicating that in terms of appearance, texture, aroma and flavor, the cala-butchi snack is very much acceptable.

CONCLUSION

The respondents have different perception about cala-mango butchi but in summary this product is very much accepted by the respondents in terms of appearance, texture, aroma and flavor. This study recommends to future researchers to consider making butchi with other flavors and do a larger scale of sampling. They may also consider adding marketability research.

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