

Preference Of Fortified Chewable Indian Mango Roll

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Abstract:

Background: Fruit is well regarded as an important component of the human diet. Fruits are prized for their vitamin and mineral content in addition to being a ready-to-eat, delectable food. In the Philippines, mangoes are so plentiful that they might even be given away for free when the season comes around. Numerous mango trees may be seen, and several farms have planted mangoes as well. Mangoes are the most popular fruit in the Philippines and are always present, even on the street. The purpose of this experiment was to find out how well-liked and acceptable Indian mango rolls with herbal condiments were. In particular, research seeks to ascertain if Indian mango rolls enriched with turmeric change significantly in terms of flavor, color, texture, and overall acceptability in different

Materials and Methods: This study employed the experimental technique of investigation, and a chosen panel of panelists utilized the hedonic scale to evaluate the product. They were given score sheets with a comparable scale. The following steps were taken in order to find the response to the hypothesis: first, high-quality Indian mango and herbal condiments were chosen; next, the treatment was prepared for trial; and last, the panelists evaluated it. Following the assessment, the researcher collected the data for statistical analysis using ANOVA and the mean

Results: The findings indicated that the panel of customers who tried the product found chewable Indian mango rolls enhanced with turmeric to be generally acceptable and highly favored in terms of flavor, color, and texture. The hypothesis that there are no appreciable differences between the treatments with different amounts of turmeric-infused chewable Indian mango rolls was accepted.

Conclusion: The study's findings led to the following conclusions: The panel of consumers who tested the product found that chewable Indian mango rolls fortified with turmeric were generally acceptable and liked the product's flavor, color, and texture, and that there were no appreciable differences between the various treatments in terms of these attributes.

Key Word: Indian Mango Roll; Turmeric Bupivacaine; Preference; Acceptability; Flavor.

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I. Introduction

Indian mangoes is a heart shape mangoes originated in India but well planted in the Philippines, it has 3 stage of ripening: 1. Unripe or premature – if you eat Indian mango in unripe stage, it will provide a sour taste but there are variety that didn't have sour, it is best with dip or condiments, 2. Almost ripe – this mango fruit stage is the most favorite of Filipinos, the sweetness and sour combination of its taste is really delicious, irresistible and you can consume it raw without sourness, and 3. Ripe– ripe Indian mangoes are rarely to be pick, due to softness of texture and unique strong sweetness that most of people didn't like. In general, the optimal time to eat a mango is when it is ripe; however, Indian mangoes ripen extremely differently. Which of those three phases of Indian mango fruit you like will depend on your own preferences because each person has a different flavor, texture, and scent.

Did you know that the Philippines is one of Asia's leading mango exporters? The Philippines consistently contributes to the mango industry with high-quality fresh and dried mango fruits. In the Philippines, mangoes are so plentiful that they might even be given away for free when the season comes around. Numerous mango trees may be seen, and several farms have planted mangoes as well. Mangoes are the most popular fruit in the Philippines and are always present, even on the street.

Vitamins A, folate, C, E, potassium, calcium, iron, magnesium, phosphorus, copper, selenium, manganese, and zinc are all abundant in Indian mangoes. Everyone agrees that fruit is essential to a human diet.

In addition to being a ready-to-eat, delectable food, fruits are prized for their vitamin and mineral content, which is essential for human health and disease resistance. A mango is a wonderful source of calories, minerals, and vitamins A and C. They have a high nutritional value because they are not cooked. Mangos are a seasonal fruit, and when they are harvested, there is sometimes an oversupply in the market. Growers may sell this fruit at a decent price and provide customers the flavor during off-season if they process it into candy. Because of their natural composition and texture, mangos are perishable and cannot be kept for an extended period of time. Due to their high perishability, a greater percentage of produced fruits are wasted as a result of improper postharvest handling and storage practices. Their short market life and seasonal abundance might cause their price to drop and result in significant losses. However, by processing this perishable fruit into goods that are shelf-stable, the aforementioned losses can be significantly reduced.

Candy is a tasty food item that is heavy in calories and has a sweet taste. The process of turning fruits into sweets involves osmotic dehydration, in which sugar enters the tissues and extracts water to create syrup. The concentration of sugar inside the fruits increases as it moves from the syrup to the tissues, while the moisture content decreases over time. Candied fruit is a fruit that has been impregnated with sugar and glucose, then drained and dried. Therefore, taking into account the fact that Indian mangoes are widely available and abundant in the area, the researchers will carry out a methodical investigation to observe how they are combined with herbal condiments. The purpose of this study was to ascertain customers' overall perceptions and degree of acceptance for chewable Indian mango rolls. In particular, this study aims to ascertain whether there are any notable differences in the various treatments of chewable Indian mango rolls fortified with turmeric, as well as the acceptability and preferences of these rolls in terms of flavor, color, texture, and general acceptability.

II. Material And Methods

This experimental study was conducted at Capiz State University, Pilar Satellite Campus on May 20180

Materials and Equipment:

Strainer, Bucket, Knife, Chopping Board, Measuring Cup, Measuring Spoon, Spatula, stove, pot, apron, hairnet, pot holder, wooden ladle, drying table, banana leaves, containers, mixing bowls, grinder/blender

Ingredients:

Ripe Indian Mango, Turmeric

Methods of Investigation:

This study employed the experimental technique of investigation, and a panel of chosen participants utilized the hedonic scale to evaluate the product. They were given score sheets with a comparable scale.

Panelist of the Study:

Thirty (30) customers from Capiz State University Pilar campus, including staff and students, participated in the panel. The collected data was statistically analyzed.

Treatment:

Mango Roll Fortified with Turmeric

Treatment A – (100% indian mango/10grams turmeric)

Treatment B – (100 %indian mango/15 grams turmeric)

Treatment C – (100 %indian mango/20 grams turmeric)

Treatment D – 100% indian mango)

Procedure: Preparation

Choose a ripe Indian mango of high quality. Rinse the mango well under running water to get rid of any dirt or bacteria. Scoop out the pulp after slicing the Indian mango fruit. Use a blender to puree the pulp. After mixing, remove extra water by heating over a low flame. Following the necessary thickness, the herbal condiments were blended in accordance with its treatment, and weighing was completed in accordance with its treatment. The product was scooped, placed on banana leaves, and then evenly distributed to the appropriate thickness. The sun dried it. It was uniformly cut and packaged after it reached the appropriate level of dryness.

Preparation of Condiments

Choosing and harvesting turmeric. To get rid of filth, wash. Cut into little pieces. Dry in the sun and crush into a powder.

Scoring and Categorization of Variables

The panelists evaluated the mango roll based on its flavor, texture, color, and overall acceptability. Each of these attributes was given a weight and score, which were then grouped as follows:

| Sensory Quality | Wright | Range of Score |
|--------------------------|--------|----------------|
| Like Extremely | 9 | 8.12-9.00 |
| Like very much | 8 | 7.23-8.11 |
| Like Moderately | 7 | 6.34-7.22 |
| Like Slightly | 6 | 5.45-6.33 |
| Neither like nor dislike | 5 | 4.56-5.44 |
| Slightly Dislike | 4 | 3.67-4.55 |
| Moderately Dislike | 3 | 2.78-3.66 |
| Very Much Dislike | 2 | 1.89-2.77 |
| Extremely Dislike | 1 | 1.00-1.88 |

Data Gathering Procedure:

The hedonic scale score sheet was used to collect the data. The thirty consumers were given the opportunity to test and assess the four therapies. Before the product's flavor, color, texture, and overall acceptability were assessed, the panelists were informed about it.

Analysis of Data:

The evaluators were given a score sheet to use as a reference and were allowed to use their own discretion to decide if the product was acceptable. The panelists' ratings were then evaluated using a Complete Randomized Design (CRD). The mean was used to analyze the data collection. The F-test was used to further examine the analysis of variance.

III. Result

Chewable Indian Mango Roll fortified with turmeric Flavor

As tested and assessed by the panel of consumers, Table 1 shows the acceptance of the chewable Indian mango roll enriched with turmeric in terms of flavor. In terms of flavor, the participants who evaluated the chewable Indian mango roll (n=30, m=7.76, SD=0.63) and (n=30, m=7.76, SD=0.80) indicated that treatments C and D were the most acceptable and liked very much. Treatment A (n=30, m=7.56, SD=0.91) was deemed acceptable and liked very much, and treatment B (n=30, m=7.74, SD=0.70) was still acceptable and liked very much. Based on the results, we can conclude that all chewable Indian mango rolls enhanced with turmeric have a flavor that is acceptable and that the panel of customers who tried the product really like it.

Table No 1. Level of Acceptability in terms of Flavor.

| TREATMENTS | M | SD | VERBAL INTERPRETATION |
|-------------|------|------|-----------------------|
| Treatment A | 7.56 | 0.91 | LIKE VERY MUCH |
| Treatment B | 7.74 | 0.70 | LIKE VERY MUCH |
| Treatment C | 7.76 | 0.63 | LIKE VERY MUCH |
| Treatment D | 7.76 | 0.80 | LIKE VERY MUCH |
| TOTAL | 7.70 | 0.76 | LIKE VERY MUCH |

Note: *p < 0.05.

Color

The acceptance of the chewable Indian mango roll enhanced with turmeric, as determined by the panel of consumers, is shown in Table 2 in terms of color. According to color, the participants who evaluated the chewable Indian mango roll preferred treatment A the most (n=30, m=7.71, SD=0.74). Treatment C (n=30, m=7.66, SD=0.58) was deemed acceptable and liked very much, followed by treatment B (n=30, m=7.58, SD=0.52), which was also deemed acceptable, and treatment D (n=30, m=7.43, SD=0.68), which was still acceptable and liked moderately. According to the results, the panel of customers who evaluated the product found that all chewable Indian mango rolls enhanced with turmeric were acceptable in terms of color and highly appreciated.

Table No 2. Level of Acceptability in terms of color.

| TREATMENTS | M | SD | VERBAL INTERPRETATION |
|--------------|-------------|-------------|-----------------------|
| Treatment A | 7.71 | 0.74 | LIKE VERY MUCH |
| Treatment B | 7.58 | 0.62 | LIKE VERY MUCH |
| Treatment C | 7.66 | 0.58 | LIKE VERY MUCH |
| Treatment D | 7.43 | 0.68 | LIKE MODERATELY |
| TOTAL | 7.59 | 0.66 | |

Note: * $p < 0.05$.

Texture

Table 3 shows the texture acceptance of the chewable Indian mango roll enhanced with turmeric based on consumer panel testing and evaluation. Regarding texture, the participants who evaluated the chewable Indian mango roll (n=30, m=7.82, SD=0.68) found that treatment D was the most acceptable and liked very much. Treatment C (n=30, m=7.63, SD=0.72) was also deemed acceptable and liked very much, followed by treatments A (n=30, m=7.59, SD=0.81) and B (n=30, m=7.59, SD=0.73), which were also deemed acceptable and liked very much. Based on the results, we can conclude that the panel of customers who tried the product found all chewable Indian mango rolls enhanced with turmeric to have a texture that they liked.

Table No. 3. Level of Acceptability in terms of texture.

| TREATMENTS | M | SD | VERBAL INTERPRETATION |
|--------------|-------------|-------------|-----------------------|
| Treatment A | 7.59 | 0.81 | LIKE VERY MUCH |
| Treatment B | 7.59 | 0.73 | LIKE VERY MUCH |
| Treatment C | 7.63 | 0.72 | LIKE VERY MUCH |
| Treatment D | 7.82 | 0.68 | LIKE VERY MUCH |
| TOTAL | 7.66 | 0.73 | LIKE VERY MUCH |

Note: * $p < 0.05$

General Acceptability

Table 4's data showed that the chewable Indian mango roll enriched with turmeric in varying amounts was generally deemed acceptable by the panel of customers who tested and assessed it. With an average score of 7.57, it indicates that the chewable Indian mango roll enhanced with turmeric is very well-liked by the panel of customers who tried and reviewed it. In particular, the most acceptable and highly liked treatment is B (n=30, m=7.63, SD=0.80), followed by A (n=30, m=7.62, SD=0.75), which is also regarded as acceptable and highly liked, C (n=30, m=7.57, SD=0.74), and D (n=30, m=7.59, SD=0.73), which received the lowest mean and is likewise regarded as acceptable and highly liked. Based on the findings, we can conclude that all chewable Indian mango rolls enhanced with turmeric are generally well-liked and accepted by the group of customers who tried the product.

Table No. 4. Level of Acceptability in terms of general Acceptability

| TREATMENTS | M | SD | VERBAL INTERPRETATION |
|--------------|-------------|-------------|-----------------------|
| Treatment A | 7.62 | 0.75 | LIKE VERY MUCH |
| Treatment B | 7.63 | 0.80 | LIKE VERY MUCH |
| Treatment C | 7.57 | 0.74 | LIKE VERY MUCH |
| Treatment D | 7.47 | 0.76 | LIKE VERY MUCH |
| TOTAL | 7.57 | 0.76 | LIKE VERY MUCH |

Note: * $p < 0.05$.

The results of the one-way ANOVA analysis of the experiment utilizing different amounts of chewable Indian mango rolls with turmeric are shown in Table 5. The substantial p-values of .713, .395, .561, and .826 correspondingly supported the hypothesis that there is no discernible change in the flavor, color, or texture of the chewable Indian mango roll, and that it is generally acceptable. This indicates that there are no appreciable differences between the turmeric-fortified chewable Indian mango roll treatments.

Table No. 5. One-Way ANOVA (Experimental Group)

| | | SUM OF SQUARES | DF | MEAN SQUARE | F | SIG. |
|----------|----------------|----------------|-----|-------------|-------|------|
| FLAVOR | Between Groups | 0.810 | 3 | .270 | .456 | .713 |
| | Within Groups | 68.644 | 116 | .592 | | |
| | Total | 69.454 | 119 | | | |
| COLOR | Between Groups | 1.307 | 3 | .436 | 1.001 | .395 |
| | Within Groups | 50.511 | 116 | .435 | | |
| | Total | 52.819 | 119 | | | |
| TEXTURES | Between Groups | 1.114 | 3 | .371 | .689 | .561 |

| | | | | | | |
|----------------------|----------------|--------|-----|------|------|------|
| | Within Groups | 62.544 | 116 | .539 | | |
| | Total | 63.658 | 119 | | | |
| ACCEPTABILITY | Between Groups | 0.522 | 3 | .174 | .299 | .826 |
| | Within Groups | 67.519 | 116 | .582 | | |
| | Total | 68.041 | 119 | | | |

*Note: *p < 0.05.*

IV. Discussion

There is a "Indian Mango Lane" at CapSU Pilar. In actuality, the majority of the fruits just fall to the ground during the season, and some are consumed by bats and birds. Mangos create an oversupply on the market throughout their season.

Dried mangoes are a popular snack in the Philippines. In addition to being tasty, it is high in vitamins. Its nutrition will be enhanced by the addition of herbal condiments.

All chewable Indian mango rolls added with turmeric were accepted by the consumer in terms of flavor, texture, and color.

This is in true with the study of Tabaldo-Tucar, E. (2017) in her experimental study aimed to determine the sensory characteristics of sweet potato cupcakes enriched with 5, 10 and 15 grams of turmeric powder in terms of its outside characteristics such as shape, color, volume and crust and its inside characteristics such as color, grain, texture, taste and aroma. The level of acceptability as to appearance, taste, texture, aroma and general acceptability was also evaluated. A sensory assessment score sheet based on the Six-Point Hedonic Scale was used by a chosen panel of evaluators to assess the sensory qualities. The results showed that the sweet potato cupcakes enhanced with five grams of turmeric powder had a yellow-orange color on the inside and a somewhat rounder top. The sweet potato cupcakes that were enhanced with 10 and 15 grams of turmeric powder, however, had a flawlessly rounded top and a golden inside. In contrast, five, ten, and fifteen grams of turmeric powder shared exterior characteristics like yellow-orange color, moderately light weight in relation to size, and a moderately shiny surface, as well as interior characteristics like thin-walled cells without larger air spaces, moderately moist, moderately tender, moderately distinct sweet potato taste, and moderately distinct sweet potato aroma. The inside features were light brown in color, moderately uniform, thin-walled cells with no larger air spaces, moderately moist, moderately tender, moderately distinct sweet potato taste, and a very distinct sweet potato aroma. In addition, the top of the cupcakes made with 0 grams of turmeric powder was perfectly rounded, light brown in color, moderately light in weight in relation to size, and had a moderately shiny surface. The cupcakes made with 5 grams of turmeric powder were the most acceptable because the group of evaluators found them to be highly comparable to all sensory characteristics. Significant differences existed in the level of acceptability of sweet potato cupcakes enriched with turmeric powder in terms of taste, aroma and general acceptability. No significant differences existed in the level of acceptability of sweet potato cupcakes enriched with turmeric powder in terms of appearance and texture as evaluated by pupils, high school students and housewives.

Since the significance is more than the 0.05 alpha threshold, Bonferroni claims that the results further confirm that there are no discernible differences between the treatments with different amounts of chewable Indian mango roll infused with turmeric. That is to say, regardless of general acceptability, flavor, color, or texture, all of the treatments are the same and acceptable.

V. Conclusion

Based on the findings, we can conclude that all chewable Indian mango rolls enhanced with turmeric are generally well-liked and accepted by the group of customers who tried the product.

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